

# Ancient and Mediaeval Observations of Comets and Novae in Chinese Sources

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## SUMMARY

The existing catalogues on ancient and mediaeval Chinese comets and novae known to western astronomers are neither complete nor accurate mainly because they do not generally come from the best sources available to us. In the Introduction the errors in these catalogues are discussed and the most important sources extant and the astronomical terms employed by the observers described. Comparative sources and parallel Korean and Japanese records are then given, whenever possible, together with the Chinese observations.

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## INTRODUCTION

It is generally known that the Chinese had been making careful and systematic observations of astronomical events many centuries before the Christian era. Their observations included among many others those on comets and novae which form the subject of this article. For these records Western astronomers since the last century have relied almost entirely on the catalogues of BIOT (1846a, b, c), WILLIAMS (1871) and LUNDMARK (1921). These are derived mainly from the *Wên Hsien Thung Khao*<sup>a</sup> (*Historical Investigation of Public Affairs*), completed by Ma Tuan-Lin<sup>b</sup> in the year A.D. 1254, and on the supplement of the same work, the *Hsü Wên Hsien Thung Khao*<sup>c</sup>. The information contained in the *Wên Hsien Thung Khao*, however, is anything but complete and not always very accurate. For example, the *Chin Shu*<sup>d</sup> (*Official History of the Chin Dynasty*) records two appearances of Halley's comet, one in May A.D. 295 and the other in March A.D. 374, but these dates are given by MA TUAN-LIN as May A.D. 296 and March A.D. 373 respectively. Besides copying these mistakes, WILLIAMS' catalogue also includes others due to misinterpretation of the original texts, neglect of the changes in the Chinese calendar and the difficulty in applying his system for converting Chinese dates to Julian dates in the presence of intercalary months. A revised list of WILLIAMS' dates is given in Table 1.

Williams' catalogue gives 373 comets from ancient times to the year A.D. 1640, or 363 comets to the year A.D. 1600, the period dealt with in the present work. Among the 363 entries, five false comets are now detected, one of them due to a misinterpretation of the commentary and the other four demonstrably planets. There are also 25 duplicate observations. These reduce the number of WILLIAMS' comets to 338 to A.D. 1600. Corrections or improvements of the dates have affected 101 of these remaining 338 comets.

The lists of novae by BIOT (1846a) and LUNDMARK (1921) have recently been revised and enlarged by HSI TSÊ-TSUNG (1958). Comparison among other Chinese sources and with Korean and Japanese records shows that some of the entries in Hsi's catalogue are comets rather than novae. For example the "nova" of March A.D. 839 (No. 47 in HSI's catalogue) appears to be part of the great winter comet of A.D. 838, and those of December A.D. 1230 (No. 70) and A.D. 1241 (No. 72 in Hsi's

Table 1  
Revision of Williams' list of Comets

| No. | Date                 | Revision                                  | No.  | Date                 | Revision                                |
|-----|----------------------|---|------|----------------------|---|
| W1  | July, 611 B.C.       | should be Autumn, 613 B.C.                | W51  | 26th August, 12 B.C. |   |
| W2  | 531 B.C.             | should be Winter, 525 B.C.                | W52  | March, 5 B.C.        |   |
| W3  | July, 516 B.C.       | text misinterpreted                       | W53  | April, 4 B.C.        |   |
| W4  | December, 502 B.C.   | should be Winter, 482 B.C.                | W54  | December, A.D. 13    |   |
| W5  | 467 B.C.             |   | W55  | November, A.D. 22    |   |
| W6  | 433 B.C.             |   | W56  | 13th March, A.D. 39  |   |
| W7  | 305 B.C.             |   | W57  | 4th June, 55         | should be 9th June, 54                  |
| W8  | 303 B.C.             |   | W58  | 9th August, 60       |   |
| W9  | 296 B.C.             |   | W59  | 27th September, 61   |   |
| W10 | 240 B.C.             |   | W60  | 4th June, 65         | should be 29th July, 65                 |
| W11 | April, 238 B.C.      |   | W61  | 20th February, 66    |   |
| W12 | January, 234 B.C.    |   | W62  | 6th March, 71        |   |
| W13 | 214 B.C.             |   | W63  | 14th July, 75        |   |
| W14 | 233 B.C.             | no comet; text misinterpreted             | W64  | 9th August, 76       | should be 7th October, 76               |
| W15 | August, 204 B.C.     |   | W65  | 23rd January, 77     |   |
| W16 | 172 B.C.             |   | W66  | 25th May, 84         |   |
| W17 | October, 157 B.C.    |   | W67  | 7th January, 102     | should read 12th January, 101           |
| W18 | January, 154 B.C.    | should be 155 B.C.                        | W68  | January, 110         |   |
| W19 | July, 155 B.C.       |   | W69  | 131                  |   |
| W20 | February, 154 B.C.   |   | W70  | 27th March, 141      |   |
| W21 | May, 148 B.C.        |   | W71  | 19th October, 149    |   |
| W22 | 14th March, 147 B.C. | should be 13th May, 147 B.C.              | W72  | 14th June, 161       |   |
| W23 | 6th August, 147 B.C. |   | W73  | September, 178       |   |
| W24 | October, 147 B.C.    |   | W74  | 180                  |   |
| W25 | March, 138 B.C.      | should be April, 138 B.C.                 | W75  | August, 182          |   |
| W26 | May, 138 B.C.        |   | W76  | 7th December, 185    |   |
| W27 | August, 138 B.C.     |   | W77  | March, 188           |   |
| W28 | October, 137 B.C.    |   | W78  | 29th July, 188       | should be 28th July, 188                |
| W29 | July, 135 B.C.       |   | W79  | October, 192         | should be October, 191                  |
| W30 | September, 135 B.C.  |   | W80  | November, 193        |   |
| W31 | June, 134 B.C.       | better July, 134 B.C.                     | W81  | 7th November, 200    | should be 6th November, 200             |
| W32 | 120 B.C.             |   | W82  | December, 204        |   |
| W33 | May, 119 B.C.        |   | W83  | February, 206        |   |
| W34 | 110 B.C.             |   | W84  | 10th November, 207   |   |
| W35 | 109 or 108 B.C.      | better between 108 and 107 B.C.           | W85  | January, 213         |   |
| W36 | August, 87 B.C.      |   | W86  | April, 218           |   |
| W37 | March, 84 B.C.       |   | W87  | November, 236        | same comet as W91                       |
| W38 | September, 77 B.C.   | should be 17th Oct. to 15th Nov., 77 B.C. | W88  | 4th November, 222    |   |
| W39 | May, 76 B.C.         |   | W89  | 9th December, 225    |   |
| W40 | March, 74 B.C.       | this was a meteor; wrong date             | W90  | 4th December, 232    | should be 3rd December, 232             |
| W41 | 10th May, 73 B.C.    | not comet; this was Mercury               | W91  | 30th November, 236   | same comet as W88                       |
| W42 | 20th August, 72 B.C. | not comet; this was Mercury               | W92  | September, 238       | should be 29th July to 27th Aug., 238   |
| W43 | 4th August, 70 B.C.  | not comet: this was Mercury               | W93  | 29th November, 238   | should be 30th September, 238           |
| W44 | February, 69 B.C.    |   | W94  | 5th November, 240    | should be 10th November, 240            |
| W45 | July, 61 B.C.        | better 24th July to 21st Aug., 61 B.C.    | W95  | 18th September, 245  |   |
| W46 | April, 49 B.C.       |   | W96  | 16th January, 247    |   |
| W47 | April, 48 B.C.       | should be May, 48 B.C.                    | W97  | April, 248           |   |
| W48 | June, 47 B.C.        | better 20th June to 18th July, 47 B.C.    | W98  | 21st December, 251   |   |
| W49 | 44 B.C.              | text misinterpreted                       | W99  | 25th March, 252      | should be 24th March, 252               |
| W50 | February, 32 B.C.    |   | W100 | December, 253        |   |
|     |                      |   | W101 | February, 255        |   |
|     |                      |   | W102 | December, 257        | better 23rd Dec., 257 to 21st Jan., 258 |
|     |                      |   | W103 | 23rd November, 259   |   |
|     |                      |   | W104 | 2nd December, 262    |   |

| No.  | Date                | Revision                              | No.   | Date                | Revision                    |
|------|---------------------|---------------------------------------|-------|---------------------|-----------------------------|
| W105 | June, 265           |                                       | W154  | 4th October, 560    | should be 9th October, 560  |
| W106 | 18th February, 268  |                                       | W155  | 23rd July, 565      | same comet as W161 and W165 |
| W107 | January, 275        |                                       | W156  | 3rd August, 568     | should be 2nd August, 568   |
| W108 | 24th June, 276      | should be 23rd June, 276              | W157  | 27th April, 575     |                             |
| W109 | February, 277       |                                       | W158  | 26th January, 416   | should be 20th Jan., 581    |
| W110 | April, 279          |                                       | W159  | 27th June, 416      | should be 18th June, 416    |
| W111 | September, 281      |                                       | W160  | 21st April, 565     |                             |
| W112 | December, 281       |                                       | W161  | 24th July, 565      | same comet as W155 and W165 |
| W113 | 22nd April, 283     |                                       | W162  | July, 568           | same comet as W166 and W156 |
| W114 | September, 287      | should be 24th Oct. to 22nd Nov., 287 | W163  | August, 568         |                             |
| W115 | May, 290            |                                       | W164  | 26th September, 561 | same comet as W155 and W161 |
| W116 | May, 296            | should be May, 295                    | W165  | 22nd July, 565      | same comet as W156 and W162 |
| W117 | April, 300          |                                       | W166  | 21st July, 568      |                             |
| W118 | January, 301        |                                       | W167  | 4th April, 574      |                             |
| W119 | May, 301            | better 24th May to 22nd June, 301     | W168  | 31st May, 574       |                             |
| W120 | May, 302            |                                       | W169  | 22nd November, 588  |                             |
| W121 | April, 303          |                                       | W170  | 10th November, 594  | should be 9th January, 595  |
| W122 | May, 304            | should be 19th June to 18th July, 304 | W171  | 13th March, 607     |                             |
| W123 | September, 305      |                                       | W172  | 4th April, 607      |                             |
| W124 | 21st November, 305  |                                       | W173  | July, 615           | should be July, 617         |
| W125 | August, 329         |                                       | W174  | July, 616           | should be October, 617      |
| W126 | 16th February, 336  |                                       | W175  | October, 616        |                             |
| W127 | 5th March, 340      | should be 25th March, 340             | W176  | 26th March, 626     |                             |
| W128 | 8th December, 343   |                                       | W177  | 22nd September, 634 | better 20th September, 634  |
| W129 | 23rd November, 349  | should be 2nd December, 349           | W178  | 30th April, 639     |                             |
| W130 | 1st July, 358       | should be 26th June, 358              | W179  | 1st August, 641     |                             |
| W131 | August, 363         | better 26th Aug. to 23rd Sept., 363   | W180  | 29th September, 663 |                             |
| W132 | March, 369          | better 24th Mar. to 22nd April, 369   | W181  | 24th May, 667       |                             |
| W133 | 9th March, 373      | should be 4th March, 374              | W182  | 3rd January, 676    | better November, 675        |
| W134 | April, 386          |                                       | W183  | 7th July, 676       | should be 4th Sept., 676    |
| W135 | 22nd August, 390    | should be 7th August, 390             | W184  | 17th October, 681   |                             |
| W136 | March, 393          |                                       | W185  | 20th April, 683     |                             |
| W137 | 19th March, 400     |                                       | W186  | 8th July, 684       | should read 6th Sept., 684  |
| W138 | 2nd January, 401    |                                       | W187  | 12th September, 684 | should read 11th Nov., 684  |
| W139 | 12th November, 402  | better November, 402                  | W188  | 16th November, 707  |                             |
| W140 | 24th June, 415      |                                       | W189  | 30th March, 708     | should be 28th July, 708    |
| W141 | 15th September, 418 | should be 24th June, 418              | W190  | 21st September, 708 | should be 16th Sept., 709   |
| W142 | 7th February, 419   | should be 17th February, 419          | W191  | between 710 and 713 | should be July, 712         |
| W143 | 21st March, 422     | should be 26th March, 422             | W192  | 30th June, 730      |                             |
| W144 | 17th December, 422  | should be 18th December, 422          | W193  | 739                 | should be 1st April, 738    |
| W145 | 13th February, 423  |                                       | W194  | 16th May, 760       |                             |
| W146 | 15th October, 423   | should be 13th December, 423          | W195  | 15th May, 760       | should be 20th May, 760     |
| W147 | 1st November, 442   | should be 10th Nov., 442              | W196  | 12th January, 767   | should be 22nd Jan., 767    |
| W148 | 11th November, 449  |                                       | W197  | 15th June, 770      | should be 26th May, 770     |
| W149 | 17th May, 451       | better 15th June to 14th July, 451    | W197* | 17th January, 773   |                             |
| W150 | 13th February, 501  |                                       | W198  | April, 815          |                             |
| W151 | 14th April, 501     |                                       | W199  | 17th February, 817  |                             |
| W152 | 16th January, 532   | should be 1st March, 533              | W200  | 27th February, 821  |                             |
| W153 | 17th November, 539  |                                       | W201  | 7th March, 821      | same as W200                |

| No.  | Date                 | Revision                             | No.  | Date                              | Revision                                 |
|------|----------------------|--------------------------------------|------|-----------------------------------|--|
| W202 | 5th July, 828        | should be 3rd Sept., 828             | W258 | 5th January, 1132                 | should be 7th Oct., 1132; same as W275   |
| W203 | December, 829        | should be November, 829              | W259 | 14th August, 1132                 | same as W261                             |
| W204 | 9th October, 834     |                                      | W260 | 26th April, 1145                  | same as W260                             |
| W205 | 22nd March, 837      |                                      | W261 | 4th June, 1145                    | better 29th December, 1146               |
| W206 | 29th April, 837      | same as W205                         | W262 | 6th January, 1147                 | better 8th February, 1147                |
| W207 | 3rd May, 837         | same as W205                         | W263 | 12th February, 1147               | should be 25th July, 1156                |
| W208 | 21st May, 837        | same as W205                         | W264 | 21st August, 1151                 | should be 25th Sept., 1222; same as W276 |
| W209 | 17th June, 837       | same as W205                         | W265 | 15th September, 1222              | should be 17th Oct., 1232; same as W277  |
| W210 | 26th June, 837       | same as W205                         | W266 | 18th October, 1232                | same as W268                             |
| W211 | 9th September, 837   | same as W205                         | W267 | 31st January, 1240                | same as W267                             |
| W212 | 11th November, 838   |                                      | W268 | 23rd February, 1240               | should be 8th Oct., 941; same as W236    |
| W213 | 21st November, 838   | same as W212                         | W269 | 26th July, 1264                   | same as W249                             |
| W214 | 7th February, 839    | same as W212                         | W270 | 7th August, 941                   | should be 2nd Oct., 1097; same as W252   |
| W215 | 12th March, 839      | same as W212                         | W271 | 10th February, 1014               | should be 4th Oct., 1132; same as W259   |
| W216 | 20th March, 840      |                                      | W272 | 24th April, 1066                  | should be 10th Sept., 1222; same as W265 |
| W217 | 3rd December, 840    |                                      | W273 | 6th January, 1080                 | should be 17th Oct., 1232; same as W266  |
| W218 | July, 841            | better 22nd July to 19th August, 841 | W274 | 6th December, 1097                | same as W269                             |
| W219 | 22nd December, 841   |                                      | W275 | 29th September, 1133              | should be 24th Jan., 1299                |
| W220 | April, 851           | should be April, 852                 | W276 | 13th September, 1226              | better 29th Oct., 1315                   |
| W221 | 27th September, 856  | should be 22nd September, 857        | W277 | 21st September, 1237              | should be 18th March, 1360               |
| W222 | 21st June, 864       |                                      | W278 | 26th July, 1264                   |  |
| W223 | February, 868        |                                      | W279 | 9th March, 1277                   |  |
| W224 | September, 869       |                                      | W280 | 7th November, 1293                |  |
| W225 | June, 877            |                                      | W281 | 24th June, 1299                   |  |
| W226 | 885                  |                                      | W282 | 16th September, 1301              |  |
| W227 | 13th June, 886       |                                      | W283 | 3rd February, 1304                |  |
| W228 | 12th May, 891        |                                      | W284 | 13th April, 1313                  |  |
| W229 | December, 892        |                                      | W285 | 28th November, 1315               |  |
| W230 | 6th May, 893         |                                      | W286 | 4th May, 1337                     |  |
| W231 | February, 894        |                                      | W287 | 26th June, 1337                   |  |
| W232 | 22nd May, 905        |                                      | W288 | 24th March, 1340                  |  |
| W233 | 13th May, 912        |                                      | W289 | 24th November, 1351               |  |
| W234 | 14th October, 928    | should be 13th December, 928         | W290 | 21st September, 1356              |  |
| W235 | 28th October, 936    | should be 21st September, 936        | W291 | 12th March, 1360                  |  |
| W236 | 18th September, 941  |                                      | W292 | 5th March, 1362                   |  |
| W237 | 5th November, 943    |                                      | W293 | 29th June, 1362                   |  |
| W238 | 13th March, 956      |                                      | W294 | 16th March, 1363                  |  |
| W239 | April, 975           |                                      | W295 | 25th October, 1366                |  |
| W240 | 3rd August, 975      |                                      | W296 | 7th February, 1368                |  |
| W241 | 13th August, 989     |                                      | W297 | 8th April, 1368                   |  |
| W242 | 23rd February, 998   |                                      | W298 | May, 1373                         |  |
| W243 | 23rd December, 1003  | should be 24th Dec., 1003            | W299 | 23rd May, 1391                    |  |
| W244 | 4th August, 1018     | should be 30th July, 1019            | W300 | 14th December, 1407               | should be 15th Dec., 1407                |
| W245 | 15th September, 1035 | should be 20th Sept., 1034           | W301 | 15th May, 1431                    |  |
| W246 | 15th January, 1036   | should be 15th Jan., 1035            | W302 | 3rd February, 1432                |  |
| W247 | 10th March, 1049     |                                      | W303 | 29th February, or 26th Oct., 1432 | should be 26th October 1432              |
| W248 | August, 1056         |                                      | W304 | 15th September, 1433              |  |
| W249 | 2nd April, 1066      | same as W272                         | W305 | 25th March, 1439                  |  |
| W250 | 17th November, 1095  | should be 17th Nov., 1075            | W306 | 12th July, 1434                   |  |
| W251 | 10th August, 1080    |                                      | W307 | 6th August, 1444                  |  |
| W252 | 6th October, 1097    | same as W274                         | W308 | 20th December, 1449               |  |
| W253 | 10th February, 1106  |                                      | W309 | 19th January, 1450                |  |
| W254 | 29th May, 1110       |                                      |      |                                   |  |
| W255 | 20th May, 1126       | should be 19th July, 1126            |      |                                   |  |
| W256 | December, 1126       |                                      |      |                                   |  |
| W257 | September, 1131      | better October, 1131                 |      |                                   |  |

| No.  | Date                 | Revision                                       | No.  | Date                 | Revision  |
|------|----------------------|--|------|----------------------|---|
| W310 | 21st March, 1452     | same as W322<br>should be 11th August,<br>1506 | W344 | 12th December, 1640  |   |
| W311 | 27th May, 1456       |  | W345 | 22nd June, 1376      |   |
| W312 | 14th January, 1457   |  | W346 | 26th September, 1378 |   |
| W313 | 15th June, 1457      |  | W437 | 23rd October, 1385   | should be 4th January,<br>1431  |
| W314 | 26th October, 1457   |  | W348 | 29th March, 1388     |   |
| W315 | 5th August, 1461     |  | W349 | 9th September, 1430  |   |
| W316 | March, 1465          |  | W350 | 14th November, 1430  |   |
| W317 | 18th September, 1468 |  | W351 | 3rd January, 1431    |   |
| W318 | 16th January, 1472   |  | W352 | 4th January, 1453    | should be 30th July,<br>1461  |
| W319 | 31st December, 1490  |  | W353 | 24th December, 1458  |   |
| W320 | 8th May, 1500        |  | W354 | 29th June, 1461      |   |
| W321 | 31st July, 1506      |  | W355 | 29th June, 1462      | should be 9th Feb.,<br>1529   |
| W322 | 10th August, 1506    |  | W356 | 19th January, 1491   |   |
| W323 | February, 1520       |  | W357 | 7th January, 1495    |   |
| W324 | July, 1523           |  | W358 | 16th August, 1499    |   |
| W324 | 5th August, 1531     |  | W359 | 28th November, 1502  |   |
| W326 | 2nd September, 1532  |  | W360 | 7th February, 1521   |   |
| W327 | 1st July, 1533       |  | W361 | 5th February, 1529   |   |
| W328 | 30th April, 1539     |  | W362 | 9th March, 1532      |   |
| W329 | 23rd June, 1554      |  | W363 | 12th June, 1534      |   |
| W330 | 1st March, 1556      |  | W364 | 24th March, 1536     |   |
| W331 | 10th October, 1557   |  | W365 | 26th December, 1545  |   |
| W332 | 9th November, 1569   |  | W366 | 22nd February, 1578  |   |
| W333 | 14th November, 1577  |  | W367 | 1st July, 1584       |   |
| W334 | 1st October, 1580    |  | W368 | 30th September, 1604 |   |
| W335 | 20th May, 1582       |  | W369 | 1609                 |   |
| W336 | 3rd October, 1585    |  | W370 | 24th November, 1618  | text gives many dates,<br>e.g., 27th Nov., 1618,<br>26th Jan., 1619, etc. |
| W337 | 3rd April, 1591      |  | W371 | 5th December, 1618   |   |
| W338 | 20th July, 1593      |  |      |                      |   |
| W339 | 26th July, 1596      |  |      |                      |   |
| W340 | 11th September, 1607 |  |      |                      |   |
| W341 | 16th November, 1618  |  |      |                      |   |
| W342 | February, 1619       |  |      |                      |   |
| W343 | 1639                 |  | W372 | 12th May, 1621       |   |

catalogue which also gives the wrong date) are clearly indicated as comets by parallel Japanese records. Some of the dates given are not very accurate, for example, Nos. 33 and 39 give the wrong year, while Nos. 37, 70, 72 and 74 give the wrong day or month. A considerable number of "guest stars" (see p. 137), for example those of A.D. 965, 1073, 1399, 1476, etc. have not been included in Hsi's list.

Our intention here is to provide for astronomers direct access to the available primary textual sources in Chinese recording comets and novae from ancient times down to the end of the Middle Ages. Full translations and exact references to the numerous sources are given. These are also supplemented by Korean and Japanese observations.\*

### SOURCES

A brief description of the sources will enable those readers not conversant with the Chinese language to judge the relative importance of the different texts when they happen to refer to the same observations. The earliest Chinese historical records known are the writings on the oracle-bones† dating from the 14th to the 11th century B.C. However the astronomical data so far found and deciphered in them are of greater historical than scientific interest, because we do not know the exact time and position of the occurrences. For the first millennium B.C. the primary sources are the *Chhun Chhiu*<sup>e</sup> (*The Spring and Autumn Annals*), a chronicle of the state of Lu covering the period B.C. 722 to B.C. 481 and the *Shih Chi*<sup>f</sup> (*Historical Records*), written by Ssuma Chhien<sup>g</sup> and his father Ssuma Than<sup>h</sup> in the decade preceding B.C. 90. The latter contains in its "Chronicles and Tables of Events" astronomical records from the seventh century B.C. down to just before the first. The next important source is the *Chhien Han Shu*<sup>i</sup> (*History of the Former Han Dynasty*), written by Pan Ku<sup>j</sup> ca. A.D. 100. Although the Former (or Early) Han Dynasty lasted from the years B.C. 206 to A.D. 24, the *Chhien Han Shu* includes astronomical records covered by its predecessor, the *Shih Chi*, and brings them down to the beginning of the first century A.D. These records are scattered in its chronicles, its astronomical chapters and its five-element chapters. Ancient records are also found in other works such as the *Tso Chuan*<sup>k</sup> (*Master Tsochhiu's Enlargement of the Chhun Chhiu*), written between B.C. 400 and B.C. 250 and attributed to Tsochhiu Ming<sup>l</sup> and the *Chu Shu Chi Nien*<sup>m</sup> (*The Bamboo Annals*), found in the tomb of An-Li Wang<sup>n</sup>, a prince of the Wei State, in the third century A.D. Although the authenticity of this latter is suspect‡, most of the passages which interest us here can be paralleled in more reliable ancient works.

The *Hou Han Shu*<sup>o</sup> (*History of the Later Han Dynasty*), written by Fan Yeh<sup>p</sup> by A.D. 450 continues the astronomical records down to the year A.D. 220. The fourth official dynastic history is the *San Kuo Chih*<sup>q</sup> (*History of the Three Kingdoms*) written ca. A.D. 290 by Chhen Shou<sup>r</sup>. Although some astronomical events are mentioned occasionally in its chronicles, it does not include an astronomical chapter. The missing information is fortunately supplied by the *Chin Shu*<sup>a</sup> (*Official History of the Chin Dynasty*), finished by Fang Hsüan-Ling<sup>s</sup> and others in A.D. 635 and the *Sung Shu*<sup>t</sup> (*History of the Liu Sung Dynasty*), completed by Shen Yo<sup>u</sup> in A.D. 500. These two official histories bring the records down to the years 420 and 478 respectively.

\* See also the Footnote on p. 135 and the additional list on p. 214, Appendix 1.

† Cf. NEEDHAM (1959), vol. 3, p. 410.

‡ See for example DEBNICKI (1956) and especially the review by PRŮSEK (1958).

The Chin Dynasty (A.D. 256 to A.D. 420) was succeeded by the Liu Sung<sup>v</sup> or the Chhien Sung<sup>w</sup> Dynasty (A.D. 420 to A.D. 479). By the end of the fourth century A.D. China was already divided politically into two. In the year 386 the Pei Wei<sup>x</sup> Dynasty was established in the north. During a stormy period lasting about two centuries the two states changed hands several times, until towards the end of the sixth century the Sui Dynasty came into being and brought unification. A number of official histories were written for this period. In 670 Li Yen-Shou<sup>y</sup> wrote the *Nan Shih*<sup>z</sup> (*History of the Southern Dynasties*—A.D. 420 to A.D. 589) and the *Pei Shih*<sup>aa</sup> (*History of the Northern Dynasties*—A.D. 386 to A.D. 581). Separate dynastic histories were also written. In 510 Hsiao Tzu-Hsien<sup>ab</sup> compiled the *Nan Chhi Shu*<sup>ac</sup> (*History of the Southern Chhi Dynasty*—A.D. 479 to A.D. 510). Then Yao Chha<sup>ad</sup> and his son Yao Ssu-Lien<sup>ae</sup> wrote the *Liang Shu*<sup>af</sup> (*History of the Liang Dynasty*—A.D. 502 to A.D. 556) in the year 629 and the *Chhen Shu*<sup>ag</sup> (*History of the Chhen Dynasty*—A.D. 556 to A.D. 580) in the following year. For the Northern Dynasties Wei Shou<sup>ah</sup> in the year 572 wrote the *Wei Shu*<sup>ai</sup>. (*History of the Northern Wei Dynasty*—A.D. 386 to A.D. 556), Li Tê-Lin<sup>aj</sup> and his son Li Pai-Yao<sup>ak</sup> in the year 640 wrote the *Pei Chhi Shu*<sup>al</sup> (*History of the Northern Chhi Dynasty*—A.D. 550 to A.D. 577) and Linghu Tê-Fên<sup>am</sup> in the year 625 wrote the *Chou Shu*<sup>an</sup> (*History of the Northern Chou Dynasty*—A.D. 557 to A.D. 581). Astronomical records for the fifth and the sixth century are thus scattered among these works—some are just duplications, but others are independent observations. Most of these records are also repeated in the *Sui Shu*<sup>ao</sup> (*History of the Sui Dynasty*) completed by Wei Chêng<sup>ap</sup> in A.D. 636. These duplicated records were later copied, though not always with the greatest accuracy, by Ma Tuan-Lin<sup>b</sup> in the 13th century A.D. when he compiled the *Wên Hsien Thung Khao*<sup>a</sup>. Although these duplicate records sometimes give rise to confusion, they are useful for checking textual errors, and the independent observations made in the northern and southern states are of course very useful.

The Koreans have also provided us with some records of ancient comets and novae. In the year A.D. 1145 King Injong<sup>aq</sup> ordered an eminent scholar Kim Pu-sik<sup>ar</sup> to write the *Samguk Sagi*<sup>as</sup> (*Historical Record of the Three Kingdoms*) after the fashion of the Chinese dynastic histories. This is the oldest extant Korean history. Here we must take note of a caution in the *Korean Studies Guide*, which says\*: “Kim used various records no longer extant. He also used Chinese histories, both to beautify his style and to supplement his information. . . His chronology is inaccurate for the early period—for Paekche and Koguryō until the late fourth century A.D., for Silla until the end of the fifth century A.D.” Although the earlier records may have been derived from Chinese sources, they are nonetheless included here for the sake of completeness.

The Japanese also started keeping astronomical records from the seventh century A.D., thus supplying us with a second independent source besides the Korean. These records are scattered among a great mass of literature and are not at all convenient to find. Fortunately they have been collected by KANDA (1935) and published in the *Nihon Temmon Shiryō*<sup>at</sup> (*Astronomical Materials in Japanese History*). The Japanese information given here is chiefly based on this catalogue and on the Astronomical Chapter of the *Dainihonshi*<sup>au</sup> (*History of Great Japan*), a work in 243 chapters

\* HAZARD, JR., B. H., HOYT, J., KIM, H. T. and SMITH, JR., W. W., *Korean Studies Guide*, Univ. of California Press, 1954, p. 80.

published under the aegis of Mitsukuni, Prince of Mito (1622 to 1700) and finished in 1715.

Back in China the Sui Dynasty ended in the year 617. The astronomical records are continued in the *Chiu Thang Shu*<sup>av</sup> (*Old History of the Thang Dynasty*) written by Liu Hsü<sup>aw</sup> ca. A.D. 945 and the *Hsin Thang Shu*<sup>ax</sup> (*New History of the Thang Dynasty*) written by Ouyang Hsiu<sup>ay</sup> and Sung Chhi<sup>az</sup> ca. A.D. 1061. Another useful source is the *Thang Hui Yao*<sup>ba</sup> (*Essential Records of the Thang Dynasty*) completed by Wang Po<sup>bb</sup> in A.D. 961. The accounts in the *Thang Hui Yao* are somewhat similar to those in the *Chiu Thang Shu*, though generally not in such great detail.

After the downfall of the Thang Dynasty in A.D. 906 another period of fragmentation followed, that of the Five Dynasties, which lasted about half a century. Astronomical records for this period are given by the *Chiu Wu Tai Shih*<sup>bc</sup> (*Old History of the Five Dynasties*) written by Hsüeh Chü-Chêng<sup>bd</sup> in A.D. 974, the *Wu Tai Shih Chi*<sup>be</sup> or *Hsin Wu Tai Shih*<sup>bf</sup> (*New History of the Five Dynasties*) written by Ouyang Hsiu<sup>ay</sup> in 1070 and the *Wu Tai Hui Yao*<sup>bg</sup> (*Essential Records of the Five Dynasties*) by Wang Po<sup>bb</sup> in A.D. 961. Not included in the list of "Twenty-Four Official Dynastic Histories" is the *Nan Thang Shu*<sup>bh</sup> (*History of the Southern Thang Dynasty*), which deals with the minor state of Nan Thang (A.D. 937 to A.D. 975). There are two different versions, the first by Ma Ling<sup>bi</sup> in the year 1105 and the second by Lu Yu<sup>bj</sup> (1125 to 1210).

Next came the Sung Dynasty, which lasted well over three centuries, from A.D. 960 to A.D. 1279. Within this period the Jurchen and the Chhi-tan Tartars established themselves in the northern parts of China. We have the *Sung Shih*<sup>bk</sup> (*History of the Sung Dynasty*) completed by Toktaga<sup>b1</sup> and Ouyang Hsüan<sup>bm</sup> in 1345, the *Chin Shih*<sup>bn</sup> (*History of the [Jurchen] Chin Dynasty*—A.D. 1115 to A.D. 1243) by the same authors in the same year and the *Liao Shih*<sup>bo</sup> (*History of the [Chhi-tan] Liao Dynasty*—A.D. 916 to A.D. 1125), also by the same authors, in the year 1350. The Sung Dynasty is often regarded as one of the most prosperous periods in the history of Chinese culture. We are primarily interested here in its contributions to the preservation and classification of astronomical records. From the tenth century several celebrated Sung scholars collected and classified the past records contained in the official histories and other literatures. First, in A.D. 983 Li Fang<sup>bp</sup> edited the *Thai-Phing Yü Lan*<sup>bq</sup> (*Thai Phing reign-period Imperial Encyclopaedia*) devoting a special section to comets and also to "guest stars". In A.D. 1084 Ssuma Kuang<sup>br</sup> finished writing the *Tzu Chih Thung Chien*<sup>bs</sup> (*Mirror of Universal History*) covering the period 402 B.C. to A.D. 959. In about A.D. 1150 Chêng Chhiao<sup>bt</sup> wrote the *Thung Chih*<sup>bu</sup> (*Historical Collections*) devoting one special chapter to astronomical records. Shortly afterwards in 1189 Chu Hsi<sup>bv</sup> completed the *Thung Chien Kang Mu*<sup>bw</sup> (*Essential Mirror of Universal History*), which is an abridged version of Ssuma Kuang's work, but contains some additional material. The data in the *Thung Chien Kang Mu*, essentially very brief, were translated by de Mailla and quoted by Pingré in his *Cométographie*<sup>\*</sup>. In the year A.D. 1211 Hsü Thien-Lin<sup>bx</sup> wrote the *Hsi Han Hui Yao*<sup>by</sup> (*Essential Records of the Western, or Former, Han Dynasty*) and in the year 1225 the same author also wrote the *Tung Han Hui Yao*<sup>bz</sup> (*Essential Records of the Eastern, or Later, Han Dynasty*) both after the fashion of Wang Po<sup>bb</sup>, the author of the *Thang Hui Yao*<sup>ba</sup> and the *Wu Tai Hui Yao*<sup>bg</sup>. Finally, in the year 1254 Ma Tuan-Lin<sup>b</sup> compiled his great compendium *Wên Hsien Thung Khao*<sup>a</sup>, from which

\* Cf. WILLIAMS (1871), p. vii.



Biot, Williams and Lundmark derived most of their information on Chinese comets and novae.

The Mongols overran China during the second half of the 13th century. Astronomical records during the Mongol period are contained in the *Yuan Shih*<sup>ca</sup> (*History of the Yuan Dynasty*—A.D. 1206 to A.D. 1367) completed in the year 1370 by Sung Lien<sup>cb</sup>. The Yuan Dynasty was followed by the Ming Dynasty, which lasted from 1368 to 1661. Astronomical records for this period are found in the astronomical chapters of the *Ming Shih*<sup>cc</sup> (*History of the Ming Dynasty*), compiled and completed by Chang Thing-Yü<sup>cd</sup> and others in 1739. Some of these records are also given in the *Ming Hui Yao*<sup>ce</sup> (*Essential Records of the Ming Dynasty*), written by Lung Wên-Pin<sup>cf</sup> in 1865.

A Supplement to the *Thung Chien Kang Mu*<sup>bw</sup>, called the *Hsü Thung Chien Kang Mu*<sup>cg</sup> (*Supplementary Volumes to the Essential Mirror of Universal History*) was written in 1476 by a team of scholars under imperial commission. To these the *Thung Chien Kang Mu Chhien Phien*<sup>ch</sup> (*Preliminary Volumes to the Essential Mirror of Universal History*) was added by Nan Hsien<sup>ci</sup> in 1595. Then came a Supplement to Ma Tuan-Lin's great compendium, the *Hsü Wên Hsien Thung Khao*<sup>cl</sup> (*Supplement to the Historical Investigation of Public Affairs*) written by Wang Chhi<sup>ck</sup> in 1586. This was revised and rewritten during the middle of the 18th century by a team of scholars in the Imperial Academy again at the emperor's command. The astronomical accounts of this revised version of the *Hsü Wên Hsien Thung Khao* are far more accurate than Ma Tuan-Lin's pioneering work. This explains the conspicuous decrease in the number of mistakes in Williams' catalogue of comets after the year 1222 (see Table 1).

We have now mentioned all the primary sources extant and also the more important secondary sources for details of ancient and medieval Chinese comets and novae. Records are also found in many other works. For example the *Thien Wên Ta Chhêng Kuan Kheui Chi Yao*<sup>cl</sup> (*Essentials of Observations of the Celestial Bodies through the Sighting-Tube*) produced by Huang Ting<sup>cm</sup> in the year 1652, the *Thu Shu Chi Chhêng*<sup>cn</sup> (*The Great Imperial Encyclopaedia*) completed by Chhen Mêng-Lei<sup>co</sup> and others in 1726 and the *Shang Shih*<sup>cp</sup> (*Ancient History*) due to Li Khai<sup>ca</sup> in 1745 abound in such records, the *Hsi Wei Shu*<sup>cr</sup> (*History of the Western Wei Dynasty*) by Hsieh Chhi-Khun<sup>cs</sup> in 1792 mentions three comets of the middle sixth century and finally the *Hsü Thang Shu*<sup>ct</sup> (*Supplement to the History of the Thang Dynasty*) by Chhen Chan<sup>cu</sup> (1753 to 1817) records eleven comets of the early tenth century. These and other works of similar nature are all secondary sources derived from those we have mentioned. It is quite possible that some further records may exist scattered among the many provincial gazetteers and even wider in the general literature. However, the collection of all these would exceed the powers of one individual investigator\*.

#### CLASSIFICATION OF STARS

The Chinese astronomers identified three major groups of stars known as "Enclosures" (*yuan*<sup>cv</sup>) and termed "Sidereal Regions" in Williams' catalogue (1871).

\* Note added in proof: An important list of comets observed in Korea in the years between 49 B.C. and A.D. 908 has been published recently by SENNOSUKE TAMURA in his book "*Tōyōin no Kagaku to Gijutsu*" (Essays in the History of East-Asian Science and Technology), pp. 128–137, Tokyo, 1958. It contains 57 comets (T1–T57) which are giving additional information about some of the items Ho 1–Ho 581 of our own Catalogue (following on pp. 141–214). These new data are assembled in our Appendix 1 on p. 214; see also the first footnote (\*) on p. 132.

These included the *Tzu-Wei*<sup>cw</sup> ("Purple Palace") Enclosure formed by stars in Draco, Ursa Major and Camelopardus; the *Thai-Wei*<sup>cx</sup> ("Great Subtlety") Enclosure formed by stars in Virgo, Leo and Coma Berenices; and the *Thien-Shih*<sup>cy</sup> ("Celestial Market") Enclosure formed by stars in Hercules, Serpens, Ophiuchus and Aquila. Distributed more or less along the Equator were the 28 lunar mansions (*hsiu*<sup>cz</sup>) (termed "stellar divisions" in Williams' catalogue). Other asterisms were described with reference to their positions relative to the three Enclosures or the 28 lunar mansions. Detailed accounts of the Chinese stars are given in the astronomical chapters of several of the official dynastic histories, such as the *Chin Shu*\*, the *Sui Shu* and the *Ming Shih*, while among western works one may refer to Schlegel's work (1875). The stars mentioned in the text are shown in the seven separate star maps, Appendix 2 and in the index, Appendix 3. It is not possible to identify the stars with absolute certainty, but as a rule the larger the star the more reliable is the identification.

#### TECHNICAL TERMS FOR COMETS AND NOVAE IN CHINESE SOURCES

One is easily tempted to follow the classification of some Official Dynastic Histories or of Ma Tuan-Lin by regarding the "broom stars" (*hui*<sup>da</sup> or *sao-hsing*<sup>db</sup>), the "long" or "tailed stars" (*chhang-hsing*<sup>dc</sup>) and the "sparkling stars" (*po-hsing*<sup>dd</sup>) as comets and the "guest stars" (*kho-hsing*<sup>de</sup>) as novae. This matter deserves closer investigation.

Comets and novae were generally included by the Chinese mediaeval astronomers as "ominous" or "evil" stars. The Astronomical Section in the *Chin Shu* (ch. 14, pp. 4a to 5b) mentions 21 types of "ominous stars"† saying: "Among the 'ominous stars' the first is the (*hui*) comet, commonly known as the 'broom star' (*sao-hsing*). Its body is a sort of star, while its tail resembles a broom. Small (*hui*) comets measure a few inches (*tshun*<sup>df</sup>) in length, but the larger ones may extend across the entire heavens. . . According to the official astronomers, the body of the comet itself is non-luminous, but derives its light from the Sun, so that when it appears in the evening it points towards the east while in the morning it points towards the west. If it is south or north of the sun the tail is always bent in a direction following the light radiating from the Sun‡—then suddenly it fades. . ."

"The second 'ominous star' is the (*po*) comet ('sparkling star'). By definition a comet pointing towards one preferential direction is a *hui*<sup>da</sup> and one that sends out its rays evenly in all directions is a *po*<sup>dd</sup>. . ."

". . . The fifth 'ominous star' *thien-chhan*<sup>dg</sup> ('celestial magnolia tree') is a sort of cloud resembling an ox according to Shih (Shen)<sup>dh</sup>, but is a sort of star with a pointed tail according to Kan (Tê)<sup>di</sup>. Wu Hsien<sup>dj</sup> described it as being 20 to 30 ft. long, rising in the west§. . ."

"The sixth 'ominous star' is the *Chhih-Yu*<sup>dk</sup> banner (*Chhih-Yu chhi*<sup>dl</sup>). It resembles a (*hui*) comet, but its tail is bent like a flag. It has been variously described—some say it looks like a solitary red cloud; others that it is yellow in colour at the top and white at the base; or that it is like a standing heron and is called the 'flag of Chhih-Yu'; or that it resembles a basket 20 feet (2 *chang*<sup>dm</sup>) long with a star at one end. . ."

\* Cf. Ho (1957). † Cf. Ho (1957).

‡ For further account of this cometary law see NEEDHAM, BEER and Ho (1957) and NEEDHAM (1959), vol. 3, p. 432.

§ Shih Shen and Kan Tê were famous astronomers of the 4th century B.C. and Wu Hsien lived much earlier in the Yin period. For further account see NEEDHAM (1959), vol. 3, p. 197.

"... The 17th 'ominous star', the 'candle star' (*chu-hsing*<sup>dn</sup>) resembles Venus. It seems to remain stationary, but soon disappears from view. Some say that it consists of a main star, above which three 'brooms' can be seen pointing upward. . ."

"The 18th 'ominous star', the 'tangle star' (*phêng-hsing*<sup>do</sup>) is as large as a double-peck measure and is white in colour. Also known as the 'king star' (*wang-hsing*<sup>dp</sup>), it appears like a flame in the night. Sometimes as many as four or five, and sometimes as few as one or two of such stars (can be seen at one particular time). One account says that the 'tangle star' has a length of several tens of feet (several *chang*<sup>dm</sup>) and can be seen in the south-west and that it appears sometimes on the left and sometimes on the right changing its position. . ."

"The 19th 'ominous star', 'long path' (*chhang-kêng*<sup>du</sup>)\* (not to be confused with Venus, which is also known by this name) is like a roll of cloth which extends across the heavens. . ."

Other types of "ominous stars", such as the *ssu-wei*<sup>dr</sup> ("Controller of Danger") are not quoted above, because they are not mentioned in the records we are dealing with so far.

"Guest stars", or "extraordinary stars" as BIOT (1846) termed them, were stars not normally observed, and have generally been regarded as novae or variable stars. From the description of "ominous stars" we can be definite only about the (*hui*) comet ("broom star") and the (*chhang-hsing*) comet ("tailed star"). The (*po*) comet ("sparkling star") undoubtedly referred to a comet viewed either "head-on" or "end-on". However, a small (*po*) comet was not easily distinguishable from a "guest star". Hence many of the "guest stars" we shall soon come across were actually comets, while a few of the (*po*) comets were probably novae. The former becomes obvious when movement of the "guest star" is suggested in the text (for example those of Feb. A.D. 990, Oct. A.D. 1005, May A.D. 1021, April A.D. 1273, etc.). We shall come across several cases where "guest stars" turned into (*hui*) comets (for example that of A.D. 1315) and *vice versa* (for example that of A.D. 1145). Indeed even meteors might have been regarded sometimes as "guest stars". The other "ominous stars" are less certain—sometimes they may have been comets and sometimes they may even have been auroral displays, depending on the interpretations adopted by the observers making the first records. The original terms are always retained in our translations so that the reader may make his own interpretation.

#### ROMANIZATION SYSTEM

Both the Koreans and the Japanese used the same terms as the Chinese for their calendars and their astronomical records. However they do not read these terms in the same way as the Chinese. For example, the Chinese word "*hui*" for comet is pronounced "*hye*" by the Koreans and read "*hakiboshi*" by the Japanese. To avoid confusion all astronomical and calendrical terms of Chinese origin are given only in Chinese transliteration. The romanization of Chinese words follows the modified form of the well-known Wade system used by NEEDHAM (1954). For words of Korean origin, such as the names of Korean kings, the Reischauer system is used throughout, and for Japanese terms the Hepburn system.

\* Cf. NEEDHAM, BEER and HO (1957).

a 文獻通考  
 b 馬端臨文獻通考  
 c 續文獻通考  
 d 晉書  
 e 春秋  
 f 史記  
 g 司馬遷談書  
 h 司馬漢書  
 i 前漢書  
 j 班固傳  
 k 左邱明紀年  
 l 左邱書  
 m 竹安釐王書  
 n 後漢書  
 o 范曄國壽齡  
 p 三陳房玄書  
 q 約宋宋魏延史  
 r 子齊察  
 s 房玄書  
 t 約宋宋魏延史  
 u 子齊察  
 v 劉前北李南  
 w 北李南  
 x 北李南  
 y 北李南  
 z 北李南  
 aa 北李南  
 ab 北李南  
 ac 北李南  
 ad 北李南

ae 姚思廉  
 af 梁書  
 ag 陳書  
 ah 魏書  
 ai 魏書  
 aj 李德林  
 ak 李百藥  
 al 北齊書  
 am 令狐德棻  
 an 周書  
 ao 隋書  
 ap 魏徵  
 aq 仁宗  
 ar 金富弼  
 as 三國史記  
 at 日本書紀  
 au 大日唐書  
 av 舊唐書  
 aw 劉昫  
 ax 新唐書  
 ay 歐陽修  
 az 宋祁  
 ba 唐會要  
 bb 王會要  
 bc 舊唐書  
 bd 薛居正  
 be 薛居正  
 bf 五代史  
 bg 五代史  
 bh 五代史

[illegible]

cm 黃 鼎  
cn 圖 書  
co 陳 夢  
cp 尚 史  
cq 李 錯  
cr 西 魏  
cs 謝 啓  
ct 續 唐  
cu 陳 鱣  
cv 垣  
cw 紫 微  
cx 太 微  
cy 天 市  
cz 宿  
da 彗  
db 掃 星  
dc 長 星  
dd 孛 星  
de 客 星  
df 寸  
dg 天 機  
dh 石 申  
di 甘 德  
dj 巫 咸  
dk 蚩 尤  
dl 蚩 尤  
dm 丈 旗  
dn 燭 星  
do 蓬 星  
dp 皇 星  
dq 長 庚  
dr 司 危

*Abbreviations*

Each translated passage is followed immediately by the exact reference to the source from which it is taken. Next to this come references to other sources. A system of abbreviation is adopted here to save space. The following list refers to the texts frequently employed:

|        |   |
|--------|---|
| B(1)   | BIOT (1846a)  |
| B      | BIOT (1846b) and BIOT (1846c)   |
| CHS    | <i>Chhien Han Shu</i>   |
| CS     | <i>Chin Shu</i>   |
| CSCN   | <i>Chu Shu Chi Nien</i>   |
| CTS    | <i>Chiu Thang Shu</i>   |
| CWTS   | <i>Chiu Wu Tai Shih</i>   |
| HHHY   | <i>Hsi Han Hui Yao</i>  |
| HHS    | <i>Hou Han Shu</i>  |
| HTCKM  | <i>Hsü Thung Chien Kang Mu</i>  |
| HTS    | <i>Hsin Thang Shu</i>   |
| HWHTK  | <i>Hsü Wên Hsien Thung Khao</i>   |
| Hsi    | Hsi Tsê-Tsung (1958)  |
| K      | KANDA (1934) and KANDA (1935)   |
| L      | LUNDMARK (1921)   |
| MHY    | <i>Ming Hui Yao</i>   |
| MS     | <i>Ming Shih</i>  |
| NS     | <i>Nan Shih</i>   |
| NTS    | <i>Nan Thang Shu</i>  |
| PS     | <i>Pei Shih</i>   |
| SC     | <i>Shih Chi</i>   |
| SS     | <i>Sung Shih</i>  |
| SShu   | <i>Sung Shu</i>   |
| Sui    | <i>Sui Shu</i>  |
| T      | TAMURA (1958)   |
| TCKM   | <i>Thung Chien Kang Mu</i>  |
| TCKMCP | <i>Thung Chien Kang Mu Chhien Phien</i>   |
| THHY   | <i>Tung Han Hui Yao</i>   |
| THY    | <i>Thang Hui Yao</i>  |
| W      | WILLIAMS (1871); followed immediately by<br>the cometary number in the same catalogue |
| WHTK   | <i>Wên Hsien Thung Khao</i>   |
| WS     | <i>Wei Shu</i>  |
| WTHY   | <i>Wu Tai Hui Yao</i>   |
| YS     | <i>Yuan Shih</i>  |

In general, the number nearest to the name of the source refers to the chapter, and the number furthest away to the page. Any number coming between them would refer to the sub-chapter. Thus WS 105/4/30a would be the abbreviation for “page 3a in sub-chapter 4 of chapter 105 of the *Wei Shu*”. A rather cumbersome notation occurs sometimes for the *Chhien Han Shu* due to the sub-division of certain chapters in the particular edition used in the *Po Na Pên* edition. This could have been avoided

by using another edition, but it is thought that most readers might prefer to employ the *Pa Na Pên* edition throughout for the official dynastic histories. This awkward notation can be best explained by giving an actual example. Thus CHS 27/3·3/27b would mean "page 27b in section 3 of sub-chapter 3 of chapter 27 in the *Chhien Han Shu*".

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### OBSERVATIONS OF COMETS AND NOVAE

(1) 14th century B.C. "On a *chi-ssu* day, the seventh day of the month, a great new star appeared in the company of the 'Fire (Star)' (Antares)." "On a *hsin-wei* day the new star dwindled." (NEEDHAM (1959) p. 424; HSI; CHHEN MENG-CHIA (1956) p. 246.)

The above are contained in the oracle-bones, dating from about the 14th century B.C. and have been regarded as the most ancient extant records of novae. NEEDHAM (1959) mentions that the two records probably referred to the same phenomenon. It is unfortunate that no exact dates or positions of the new stars can be deduced from the above.

An even earlier comet is mentioned in the Biography of Chang Yuan of the *Wei Shu*, which says, "When Chieh executed his faithful counsellors a (*po*) comet made its appearance" (WS 91/12a). We need not concern ourselves with the authenticity of the record as even Chieh himself is regarded by modern scholars to be a legendary figure and supposed to have flourished ca. 1600 B.C. Cf. for example MOULE (1957).

(2) 11th century B.C. "When King Wu-Wang waged a punitive war against King Chou a (*hui*) comet appeared with its tail pointing towards the people of Yin." (*Huai Nan Tzu* 15/6b.)

No earlier sources of reference to this observation have been found other than this singular record by Liu An, the Prince of Huai-nan in the 2nd century B.C. Moreover, the year when the war took place has long been an open question. It has been regarded as 1122 B.C., 1109 B.C., 1055 B.C. and even 1030 B.C. A recent study by CHANG HUNG-CHHIAO (1958) (p. 93 ff) suggests that the year 1055 B.C. was most probable.

(3) Spring, 974 B.C. "In spring, in the 19th year of (Chou) Chao-Wang a (*po*) comet appeared within the *Thai-Wei* (Enclosure)." (CSCN 2/8b; *Thu Shu Chi Chhêng* 35/1b.)

This record has not been traced in more reliable ancient works than the CSCN. The compilers of the *Thu Shu Chi Chhêng* in the 18th century A.D. must have copied this item from the CSCN although they state that the comet was seen in the *Tzu-Wei* instead of the *Thai-Wei* Enclosure.

(4) 633 B.C. "When (the Duke) Wên-Kung of Chin (State) was about to engage in a battle at Chhêng Pu against (the State of) Chhu a (*hui*) comet appeared at Chhu, and Chhu was holding its handle (i.e. the tail of the comet was pointing towards Chhu State)." (*Lun Hêng Chiao Shih* 5/215; Forke's translation of *Lun Hêng* vol. 2, p. 169.)

It has not been possible to trace this reference to an earlier source than the work of the famous Han scholar Wang Chhêng (ca. 1st cent. A.D.). Forke gives the year as 632 B.C., but the alleged battle took place in the previous year.

(5) *Autumn*, 613 B.C. "In autumn, during the seventh month of the 14th year of Lu Wên-Kung (or the sixth year of Chou Chhing-Wang) a (*hui*) comet entered *Pei-Tou* (the Great Bear)." (*Chhun Chhiu Kung Yang Chuan* 14/6b; *Chhun Chhiu Ku Liang Chuan* 11/7a; SC 14/38a; CHS 27/3, 3/23a; CSCN 2/23b; TCKM 17/8b; WHTK 286/1a; W1; LEGGE (1872) vol. 5, p. 266; CHAVANNES (1895-1905) vol. 3, p. 403f).

This is the first comet in Williams' catalogue, taken from the WHTK. However, Williams confuses the 14th year of Lu Wên-Kung with the second year of Chou Khuang-Wang thus giving the year as 611 B.C. Chavannes gives the date as August 613 B.C., but Legge gives August 614 B.C. A solar eclipse is recorded on the first day in the sixth month of the seventh year of Chou Chhing-Wang corresponding to the date 28th February, 612 B.C. Hence the sixth year of Chou Chhing-Wang must be 613 B.C. TCKM quotes from the *Chhun Chhiu* and gives the year-cycle as *wu-shen*, which again coincides with the year 613 B.C.

(6) *Spring*, 532 B.C. "In spring, during the 26th year of Chin Phing-Kung [or the 13th year of Chou Ching-Wang] a star was seen at the *Wu-Nü* (tenth lunar mansion)." (*Chhun Chhiu Ching Chuan Chi Chieh* 22/11b; SC 14/51b; CSCN 2/25a; COUVREUR (1914) vol. 3, p. 170; Hsi.) Hsi regards it as a nova.

(7) *Winter*, 525 B.C. "During the 17th year of Lu Chao-Kung [or the 20th year of Chou Ching-Wang] a (*po*) comet appeared in the winter at *Ta-Chhen* (Antares)." (*Chhun Chhiu Kung Yang Chuan* 23/5a; *Chhun Chhiu Ku Liang Chuan* 18/3a; SC 14/53a; CHS 27/3, 3/24b; TCKM 21/43b; WHTK 286/1b; W2; LEGGE (1872) vol. 5, p. 667.)

WHTK confuses the year as the tenth year of Lu Chao-Kung. Williams copies this mistake and gives 531 B.C. The two versions of the *Chhun Chhiu* give the year-cycle as *ping-tzu*, which coincides with the year 525 B.C.

(8) 516 B.C. "During the 32nd year of Chhi Chuang-Kung (or the fourth year of Chou Ching-Wang, or the 26th year of Lu Chao-Kung) a (*hui*) comet appeared." (SC 14/54a; WHTK 286/2b; W3.)

The WHTK says that a comet was observed "at (the State of) Chhi", but this is misinterpreted by Williams as near the star *Tsze* in Hercules.

(9) 500 B.C. "During the first year of Chhin Hui-Kung (or the 20th year of Chou Ching-Wang) a (*hui*) comet was seen." (SC 14/57a.)

(10) *Winter*, 482 B.C. "In winter, during the 11th month of the 13th year of Lu Ai-Kung a (*po*) comet appeared at the E." (*Chhun Chhiu Kung Yang Chuan* 28/4a; *Chhun Chhiu Ku Liang Chuan* 20/12b; CHS 27/3, 3/26a; WHTK 286/2b; W4; Legge (1872) vol. 5, p. 831; CHAVANNES (1895-1905) vol. 3, p. 403f.)

A solar eclipse was recorded on the first day in the fifth month of the 14th year, corresponding to 19th April, 481 B.C. The *Chhun Chhiu* gives the year-cycle as *chi-wei*, again coinciding with the year 482 B.C. Williams gives the wrong date December 502 B.C.; Chavannes gives the correct year.

(11) *Winter*, 481 B.C. "In winter, during the 14th year of Lu Ai-Kung a (*po*) comet was observed." (CHS 27/3, 3/26b.)

(12) 470 B.C. "During the seventh year of Chhin Li-Kung-Kung (or the seventh year of Chou Yuan-Wang) a (*hui*) comet was seen." (SC 15/4b.)

(13) 467 B.C. "During the tenth year of Chhin Li-Kung-Kung [or the second year of Chou Ting-Wang] a (*hui*) comet was seen." (SC 15/5a; WHTK 286/2b; W5.)

Regarded as Halley's comet; cf. CHU WÊN-HSIN (1933), PROCTOR and CROMMELIN (1937) p. 61 and SCHÖVE (30).

(14) 433 B.C. "During the eighth year of Chou Khao-Wang a (*hui*) comet was observed." (WHTK 286/3a; TCKMCP 25/29a; W6.)



(15) 361 B.C. "During the first year of Chhin Hsiao-Kung [or the eighth year of Chou Hsien-Wang] a (*hui*) comet appeared in the W." (SC 15/17b; TCKM 1/43a.)

(16) 305 B.C. "During the second year of Chhin Chao-Wang [or the tenth year of Chou Nan-Wang] a (*hui*) comet was seen." (SC 15/25b; TCKM 1/106a; WHTK 286/3a; W7.)

(17) 303 B.C. "During the fourth year of Chhin Chao-Wang [or the 12th year of Chou Nan-Wang] a (*hui*) comet was seen." (SC 15/25b; TCKM 1/107a; WHTK 286/3a; W8.)

(18) 296 B.C. "During the 11th year of Chhin Chao-Wang [or the 19th year of Chou Nan-Wang] a (*hui*) comet was seen." (SC 15/26b; WHTK 286/3a; W9.)

(19) 240 B.C. "During the seventh year of Chhin Shih-Huang-Ti a (*hui*) comet first appeared at the N and during the fifth month it was seen at the W. [Later] it was again seen at the W." (SC 6/2b and 15/33b; WHTK 286/3a; W10.)

Regarded as Halley's comet; cf. CHU WÊN-HSIN (1933), SCHÖVE (1955).

(20) 238 B.C. "During the ninth year of Chhin Shih-Huang-Ti a (*hui*) comet was seen. It possibly stretched across the heavens . . . A (*hui*) comet appeared in the W and then in the N, moving southward towards the (*Nan*-) *Tou* (eighth lunar mansion) and lasted 80 days." (SC 6/4a and 6/5b and 15/34a; WHTK 286/3a; W11.)

It is difficult to say whether or not this refers to one or two comets. Williams calls it a "doubtful star" through misinterpreting the word "possibly". Cf. CHU WÊN-HSIN (1933).

(21) 234 B.C. "During the first month of the 13th year of Chhin Shih-Huang-Ti a (*hui*) comet was seen at the E." (SC 6/7b and 15/34b; WHTK 286/3b; W12.)

WHTK says that this occurred during the "first month".

(22) 214 B.C. "During the 33rd year of Chhin Shih-Huang-Ti a bright star appeared in the W." (SC 6/22a; TCKM 2/75b; WHTK 286/3b; W13; Hsi.)

The commentary of the SC says clearly that it was a comet, but Hsi regards it as a nova. Williams says that this was a comet seen in the E.

(22\*) *Williams' comets of 233 B.C.—W14.* Williams translated the explanatory notes in the WHTK (286/3b) as, "In the astronomy of the Han dynasty it is recorded that in the time of Che Wang (Shih-Huang), of the Tsin (Chhin) Dynasty, in his 15th year, four comets were seen during 80 days. They extended to the horizon." However, the same passage should read, "In the astronomical chapters of the Han (Dynastic History) (CHS 26/23b) [it is recorded that] during the time of Chhin Shih-Huang comets were seen on four occasions within a period of 15 years. The longest duration was 80 days and the largest one possibly extended across the heavens. . . ." Chavannes renders the same passage as, "Au temps de Ts'in Che-hoang, la quinzième année (232 av. J.-C.) il y eut quatre apparitions de comètes; la plus durable persista 80 jours et elle était d'une grandeur telle qu'elle remplissait presque tout le ciel." (*Les Mémoires Historiques* III p. 406.)

(23) *August–September, 204 B.C.* "During the seventh month of the third year of Kao-Ti [14th August to 11th September] a (*po*) comet was observed at *Ta-Chio* (Arcturus) for over ten days before going out of sight." (CHS 27/3, 3/26b; TCKM 2/167b; WHTK 286/3b; HHHY 29/9b; W15; Hsi.)

Hsi regards it as a nova.

(24) 172 B.C. "During the eighth year of the Emperor Wên-Ti a (*chhang-hsing*) comet was observed in the E." (TCKM 3/137b; W16.)

(25) *6th February, 162 B.C.* "On a *jen-yin* day in the first month of the second year of the later (Hou) reign-period of Hsiao-Wên (-Ti) a (*thien-chhan*) comet appeared in the SW." (CHS 26/25a; HHHY 28/1b.)

Chu Wên-Hsin gives the year as 163 B.C. and regards it as Halley's comet. Cf. also PROCTOR and CROMMELIN (1937) p. 62.

(26) *October*, 157 B.C. "During the ninth month of the seventh year of the later (Hou) reign-period of (Hsiao-)Wên-Ti [8th October to 5th November] a (*po*) comet appeared in the W. Its body laid straight across the *Wei* and the *Chi* (sixth and seventh lunar mansions) and its tail pointed towards the *Hsü* and the *Wei* (11th and 12th lunar mansions). It measured over 10 ft. (1 *chang*) and reached the Milky Way (*Thien-Han*). It went out of sight after 16 days." (CHS 27/3· 3/27a; TCKM 3/160a; WHTK 286/3b; HHHY 29/9b; W17.)

(27) 155 B.C. "During the second year of Hsiao-Ching(-Ti) a (*hui*) comet appeared from the SW." (CHS 26/25b; TCKM 4/2b; WHTK 286/4a; HHHY 28/1b; W18.)

TCKM says that the comet was seen in winter, during the 12th month. During that period the Chinese year began at the tenth month. This explains why Williams has given the date January, 154 B.C.

(28) *September*, 155 B.C. "During the eighth month of the second year of Hsiao-Ching-Ti 11th September to 10th October) a (*hui*) comet was seen at the NE." (SC 11/1b; TCKM 4/3b; W19.)

Williams gives "in the sixth month", probably taken from TCKM, which does not express the month very clearly.

(29) *February*, 154 B.C. "During the first month of the third year of Hsiao-Ching-Ti (6th February to 6th March) a (*chhang-hsing*) comet appeared in the W." (SC 11/1b; TCKM 4/6a; W20.)

(30) *May*, 148 B.C. "In summer, during the fourth month of the second year of the Chung-Yuan reign-period [29th April to 27th May] there was a comet in the NW." (TCKM 4/25a; W21.)

(31) *13th May*, 147 B.C. "On a *ting-yu* day in the third month of the third year of the Chung-Yuan reign-period a (*hui*) comet appeared at night in the NW. It was of a white colour, measuring 10 ft (1 *chang*) and was found at the *Tsui-Hsi* (20th lunar mansion). It moved away at dawn and became smaller. After 15 days it went out of sight." (CHS 26/26b; WHTK 286/4a; HHHY 28/2a; W22.)

Williams gives the date as 14th March, but the first day in the third month corresponds to 18th April, while the *ting-yu* day was the 26th day of the third month.

(32) *6th August*, 147 B.C. "On a *jen-hsü* day in the sixth month (of the third year of the Chung-Yuan reign-period) a (*phêng-hsing*) comet appeared at the SW at about a distance of 20 ft (2 *chang*) to the south of the *Fang* (fourth lunar mansion). It was of the size of a double-peck measure and was of a white colour. On a *kuei-hai* day [7th August] it was NE of the *Hsin* (fifth lunar mansion) and measured about 10 ft (1 *chang*). On a *chia-tzu* day [8th August] it was north of the *Wei* (sixth lunar mansion) measuring about 60 ft (6 *chang*). On a *ting-mao* day [11th August] it was at the north of the *Chi* (seventh lunar mansion) and near the Milky Way. It had become smaller, and when it went out of sight in the morning it was as large as a peach. It left on a *jen-shen* day [16th August] after an appearance of ten days." (CHS 26/26b; HHHY 28/2a; W23.)

(33) *October*, 147 B.C. "In the ninth month (of the third year of the Chung-Yuan reign-period) [12th October to 10th November] there was a comet in the NW." (TCKM 4/28b; W24.)

(34) *April*, 138 B.C. "During the third month of the third year of the Chien-Yuan reign-period of Hsiao-Wu(-Ti) [9th April to 7th May] a (*po*) comet appeared at the *Chang* (26th lunar mansion). It passed the *Thai-Wei* (Enclosure), trespassed against the *Tzu-Wei* (Enclosure) and reached the Milky Way (*Thien-Han*)." (CHS 26/27b; WHTK 286/4a; HHHY 28/2b; W25.)

The WHTK gives the second month of the third year.

(35) *May*, 138 B.C. "During the fourth month of the third year (of the Chien-Yuan reign-period) [8th May to 6th June] a (*po*) comet appeared at *Thien-Chi* (in Hercules) and went as far as *Chih-Nü* (Vega)." (CHS 26/27b; WHTK 286/4b; HHHY 28/2b; W26.)

(36) *August*, 138 B.C. "In autumn, during the seventh month of the third year of the Chien-Yuan reign-period [5th August to 3rd September] there was a (*po*) comet in the NW." (TCKM 4/54b; W27.)

(37) *October*, 137 B.C. "In autumn, during the ninth month of the 4th year of the Chien-Yuan reign-period [21st September to 20th October] there was a comet in the NE." (TCKM 4/60a; W28.)

(38) *July*, 135 B.C. "During the sixth month of the sixth year of the Chien-Yuan reign-period of Wu-Ti [July 3rd to August 1st] a (*po*) comet was seen in the N." (CHS 27/3. 3/27a; WHTK 286/4b; HHHY 29/9b; W29.)

(39) *September*, 135 B.C. "During the eighth month of the sixth year of the Chien-Yuan reign-period [August 31st to September 29th] a (*chhang-hsing*) comet appeared in the E, stretching across the heavens. It lasted 30 days before leaving." (CHS 27/3. 3/27b; TCKM 4/61b; WHTK 286/4b; HHHY 29/9b; W30.)

(40) *July*, 134 B.C. "During the sixth month of the first year of the Yuan-Kuang reign-period [22nd June to 21st July] a "guest star" appeared at the *Fang* (fourth lunar mansion)." (CHS 26/28a; HHHY 28/3a; B(1); W31; L; Hsi.)

Biot and Hsi regard it as a nova.

(41) *September*, 134 B.C. "During the eighth month of the first year of the Yuan-Kuang reign-period [21st August to 18th September] a (*chhang-hsing*) comet stretched across the heavens. Hence the reign-period was changed." (TCKM com.4/116a; SC 12/7b.) The SC merely says, "The second reign-period was called Yuan-Kuang because of the appearance of a (*chhang-hsing*) comet." There is some likelihood that the commentator of TCKM has confused this with the September 135 B.C. comet in No. 39.

(42) *Spring*, 120 B.C. "In spring, during the third year of the Yuan-Shou reign-period a (*po*) comet was seen in the E." (TCKM 4/126a; W32.)

(43) *May*, 119 B.C. "During the fourth month of the fourth year of the Yuan-Shou reign-period [8th May to 6th June] a (*chhang-hsing*) comet was again seen in the NW." (CHS 27/3. 3/27b; TCKM 4/133b; WHTK 286/4b; HHHY 29/10a; W33.)

TCKM says, "In the spring of the fourth year a (*po*) comet appeared in the NE, and in summer a (*chhang-hsing*) comet was seen in the NW."

(44) *June*, 110 B.C. "During the fifth month of the first year of the Yuan-Fêng reign-period [29th May to 26th June] a (*po*) comet appeared at the *Tung-Ching* (22nd lunar mansion). The comet was also seen at *San-Thai*." (CHS 27/3. 3/27b; SC 12/20a; TCKM 5/6a; WHTK 286/5a; HHHY 29/10a; W34.) The SC says, "During the first year of the Yuan-Fêng reign-period a (*po*) comet was seen at the *Tung-Ching* (22nd lunar mansion). After more than ten days the comet appeared at *San-Nêng* [= *San-Thai*]."

(45) *Between* 108 B.C. and 107 B.C. "In the middle of the Yuan-Fêng reign-period a (*po*) comet was seen at *Ho-Shu*." (CHS 26/28b; WHTK 286/5a; HHHY 28/3a; W35.)

Williams gives between 109 B.C. and 108 B.C.

(46) *Around* 102 B.C. "In the middle of the Thai-Chhu reign-period a (*po*) comet was seen among the stars of *Chao-Yao*." (CHS 26/28b; WHTK 286/5a; HHHY 28/3a.)

(47) *August*, 87 B.C. "In autumn, during the seventh month of the second year of the Hou-Yuan reign-period [10th August to 8th September] a (*po*) comet appeared in the E." (TCKM 5/69a; W36.)

This was probably Halley's Comet. Cf. SCHÖVE (1955).

(48) *March*, 84 B.C. "In spring, during the second month of the third year of the Chih-Yuan reign-period of the Emperor Chao-Ti [12th March to 10th April] a (*po*) comet was seen at the NW." (TCKM 5/74a; W37.)

(49) *Around 83 B.C.* "In the middle of the Chih-Yuan reign-period of the Emperor Hsiao-Chao(-Ti) a (*phêng-hsing*) comet was seen at the W, in the eastern door of the *Thien-Shih* (Enclosure). It passed *Ho-Ku* and entered the *Ying-Shih* (13th lunar mansion)." (CHS 26/28b; HHHY 28/3a.)

CHU WÊN-HSIN (1933) says that by computation Halley's comet ought to occur in 87 B.C. and suggests that the year, which is not definitely stated, might be 87 B.C.

(50) *October–November*, 77 B.C. "During the ninth month of the fourth year of the Yuan-Fêng reign-period [of the Emperor Hsiao-Chao-Ti] [17th October to 15th November] a "guest star" appeared at the *Tzu-Wei* (Enclosure) between the star *Tou-Shu* (a UMa) and the Pole (Star)." (CHS 26/29b; HHHY 28/3b; B(1); W38; L; Hsi.)

Williams gives the date as September 77 B.C. This "guest star" is regarded by Biot and Hsi as nova, said to be near NGC 3587.

(51) *May*, 76 B.C. "During the fourth month of the fifth year of the Yuan-Fêng reign-period [12th May to 9th June] a candle-star (*chu hsing*) was seen between the *Khuei* and the *Lou* (15th and 16th lunar mansions)." (CHS 26/29b; HHHY 28/3b; B(1); W39; L; Hsi.)

Regarded by Williams as comet, but by Biot, Lundmark and Hsi as nova.

(51\*) *Williams' comet of 7th April*, 74 B.C. "On a *chia-shen* day in the second month of the first year of the Yuan-Phing reign-period a large star was seen in the morning. It looked like a moon, and many stars followed it as it moved westward." (CHS 26/29b; TCKM 5/94b; HHHY 28/3a; W40.)

TCKM says explicitly that this was a meteor.

(51\*\*) *Williams comet of 10th May*, 73 B.C. Williams confuses the planet Mercury with comet. The text says, "In the first watch of the night on a *jen-hsü* day in the fourth month of the last year of the Pên-Chih reign-period of the Emperor Hsiao Hsüan(-Ti) *Chhen-Hsing* (Mercury) and the *Shen* (21st lunar mansion) were seen together in the W." (CHS 26/30a; HHHY 28/4a; W41.)

(51\*\*\*) *Williams' comet of 20th August*, 72 B.C. Williams confuses the planet Mercury with comet. The text says, "On a *hsin-hai* day in the seventh month of the second year of the Pên-Chih reign-period *Chhen-Hsing* (Mercury) appeared in the evening together with the *I* (27th lunar mansion)." (CHS 26/30a; HHHY 28/4a; W42.)

(51\*\*\*\*) *Williams' comet of 4th August*, 70 B.C. Williams confuses the planet Mercury with comet. The text says, "On a *chia-chhen* day in the seventh month of the fourth year of the Pên-Chih reign-period *Chhen-Hsing* (Mercury) appeared at the *I* (27th lunar mansion) and was trespassed against by the moon." (CHS 26/30b; HHHY 28/4a; W43.)

(52) *February*, 69 B.C. "During the first month of the first year of the Ti-Chieh reign-period [27th January to 24th February] a (*po*) comet was seen in the W about 20 ft (2 *chang*) away from Venus." (CHS 27/3·3/27b; TCKM 5/118b; WHTK 286/5b; HHHY 29/10a; W44; Hsi.)

Regarded by Williams as comet, but by Hsi as nova.

(53) *23rd July*, 69 B.C. "At the first watch of the night, on a *wu-hsü* day in the sixth month of the first year of the Ti-Chieh reign-period a 'guest star' stayed between the left and the right star of the *Chio* (first lunar mansion), pointing SE and measuring about 2 ft (*chhih*). Its colour was white." (CHS 26/30b; HHHY 28/4a; B(1); Hsi.)

Regarded by Biot and Hsi as nova.

(54) *20th August*, 69 B.C. "On a *ping-yin* day in the sixth month of the first year of the Ti-Chieh reign-period another 'guest star' was seen at the NE of *Kuan-So* moving in a southerly

direction. On a *kuei-yu* night in the seventh month [27th August] it entered the *Thien-Shih* (Enclosure), with its rays pointing towards the SE. Its colour was white." (CHS 26/31a; HHHY 28/4a.)

(55) *August*, 61 B.C. "During the sixth month of the first year of the Shen-Chüeh reign-period [24th July to 21st August] a (*po*) comet was seen in the E." (TCKM 6/6a; W45.)

(56) *April*, 49 B.C. "During the third month of the first year of the Huang-Lung reign-period [14th April to 12th May] a 'guest star' stayed at the NE of *Wang-Liang*, at a distance of about 9 ft (*chhih*) away. It measured over 10 ft (1 *chang*) and pointed towards the W. It left *Ko-Tao* and arrived at the *Tzu-Wei* (Enclosure)." (CHS 26/31a; HHHY 28/4b; B(1); W46.)

Biot regards it as nova. He gives "the second month" and hence his date "March, 49 B.C."

The same comet is recorded in the *Chronicle of Silla*, which gives the date as "the third month of the ninth year of Hyökköse Wang." (*Samguk Sagi* 1/2.)

(57) *May*, 48 B.C. "During the fourth month of the first year of the Chhu-Yuan reign-period [3rd May to 31st May] a 'guest star' of the size of a melon and with a bluish-white colour, was seen about 4 ft (*chhih*) away east of the second star in the *Nan-Tou* (eighth lunar mansion)." (CHS 26/31a; WHTK 294/5b; HHHY 28/4b; B(1); W47; L; Hsi.)

This is regarded by Biot, Lundmark and Hsi as nova. Williams gives the date as April, 48 B.C.

(58) *June-July*, 47 B.C. "During the fifth month of the second year of the Chhu-Yuan reign-period [20th June to 18th July] a 'guest star' appeared at the division of the *Mao* (18th lunar mansion) and stayed at about 5 ft (*chhih*) to the east of *Chüan-Shê*. It was bluish-white in colour and its rays measured 0.3 ft (3 *tshun*)." (CHS 26/31b; WHTK 294/5b; HHHY 28/4b; B(1); W48.)

(59) *May-June*, 44 B.C. "During the fourth month of the fifth year of the Chhu-Yuan reign-period [18th May to 16th June] a (*hui*) comet was seen at the NW. It was reddish-yellow and measured about 8 ft (*chhih*). After a few days it measured over 10 ft (1 *chang*) and pointed towards NE. It was then found at the division of the *Shen* (21st lunar mansion)." (CHS 26/31b; WHTK 286/5b; HHHY 28/4b; W49.)

Williams continues, "... after about two months it turned again to the west." The text, however, says, "... More than two years later (the tribes of) western Chiang revolted."

The same comet is recorded in the *Chronicle of Silla* which says, "During the fourth month of the 14th year of Hyökköse Wang a (*po*) comet was observed at the *Shen* (21st lunar mansion)." (*Samguk Sagi* 1/2.)

(60) *February*, 32 B.C. "During the first month of the first year of the Chien-Shih reign-period of Chhêng-Ti [6th February to 7th March] a (*po*) comet appeared at the *Ying-Shih* (13th lunar mansion). It was of a bluish-white colour and measured 60 to 70 ft (6 or 7 *chang*) in length and over 1 ft (*chhih*) in width." (CHS 27/3·3/27b; WHTK 286/5b; HHHY 29/10a; W50.)

(61) *26th August*, 12 B.C. "On a *hsin-wei* day in the seventh month of the first year of the Yuan-Yen reign-period a (*po*) comet was seen at the *Tung-Ching* (22nd lunar mansion), treading on *Wu-Chu-Hou*. Later it appeared at the north of *Ho-Shu* and moved to *Hsien-Yuan* and the *Thai-Wei* (Enclosure). After that it travelled at the rate of more than 6 degrees (*tu*) per day, and was seen in the morning at the E. On the 13th day it appeared in the evening at the W. It trespassed against *Tzu-Fei*, *Chhang-Chhiu* (= *Hou-Hsing*), (*Pei*-) *Tou* and Saturn (*Chen-Hsing*), while its pointed rays again penetrated the *Tzu-Wei* (Enclosure) with *Ta-Huo* (Antares) right behind. It later reached the Milky Way, with its tail sweeping the region confining the stars *Hou* and *Fei*. It then went southwards and trespassed against *Ta-Chio* (Arcturus) and *Shê-Thi*. When it reached the *Thien-Shih* (Enclosure) its motion became retarded with time. Its rays entered the *Thien-Shih* (Enclosure), and after ten days it went westwards. After 56 days it went out of sight together with *Tshang-Lung* [i.e. when it was at Scorpius]." (CHS 27/3·3/28a;

*Han Shu Pu Chu* 27/3·3/23a; TCKM 7/29a; WHTK 286/6a; HHHY 29/10a; W51; DUBS (1938-1955) vol. 2, p. 414. TCKM merely says, "In autumn, in the seventh month of the first year of the Yuan-Yen reign-period a (*po*) comet appeared at the *Tung-Ching* (22nd lunar mansion)."

This is mentioned by Crommelin and suggested by Chu Wên-Hsin to be Halley's Comet. Cf. also SCHÖVE (1955).

(62) 10 B.C. "During the third year of the Yuan-Yen reign-period a (*po*) comet was seen at *Shê-Thi* and *Ta-Chio*." (TCKM com. 7/36a.)

This is only mentioned in the commentary of the TCKM.

(63) *March*, 5 B.C. "During the second month of the second year of the Chien-Phing reign-period [10th March to 7th April] a (*hui*) comet appeared at the *Chhien-Niu* (ninth lunar mansion) for over 70 days." (CHS 26/34b; TCKM 7/71a; WHTK 286/6b; HHHY 28/6b; B(1); W52; Hsi.)

Hsi suggests that it might be a radio-source.

(64) 4 B.C. "During the third year of the Chien-Phing reign-period a (*po*) comet was seen at *Ho-Ku*." (TCKM 7/75b; W53.)

This comet is also recorded in the *Chronicle of Silla*, which says, "On a *chi-yu* day in the second month of the 54th year of Hyôkkôse Wang [probably 23rd February] a (*po*) comet was seen at *Ho-Ku*." (*Samguk Sagi* 1/3.)

The Korean date in this case does not correspond to the Chinese Calendar, as the *chi-yu* day did not fall on the second month that year, but on the first [i.e., 23rd February] and on the third [24th April].

(65) *December*, A.D. 13. "During the eleventh month of the fifth year of the Chien-Kuo reign-period of Wang Mang [22nd November to 21st December] a (*hui*) comet was observed." (TCKM 8/51b; W54.)

(66) *November-December*, A.D. 22. "During the eleventh month of the third year of the Ti-Huang reign-period of Wang Mang [13th November to 12th December] a (*po*) comet appeared at the *Chang* (26th lunar mansion). It moved towards the SE and went out of sight after five days." (HHS 20/1/5a; TCKM 8/83b; WHTK 286/7a; THHY 16/1a; W55.)

(67) A.D. 29. "During the fifth year of the Chien-Wu reign-period a 'guest star' was seen." (HHS com. 20/1/9a; HHS 83/10a; WHTK com. 294/6a; Hsi.)

This observation is not formally recorded in the astronomical chapters, but is given in the *Biography of Yen Kuang* (HHS 83/10a). Wang Hsien-Chhien (1842-1918), the commentator in the *Hou Han Shu Chi Chieh* expresses his doubt as to the authenticity of the observation, saying that it was recorded neither in the *Chronicles* nor in the *Astronomical Chapters* of the HHS, and secondly Fan Yeh, the author of the HHS, had borrowed the account from some unreliable source in order to dramatize his description. (*Hou Han Shu Chi Chieh* 83/6b.) Yen Kuang was an eminent scholar and a close friend of Wu-Ti long before the latter ascended the throne. After Wu-Ti had become Emperor, Yen Kuang tried to live in seclusion, but was eventually located and invited to the palace. Although the Emperor Wu-Ti was unable to make Yen Kuang serve in his court in spite of all his persuasive power, the two friends renewed their acquaintances and spent the night together in the same bed. It is said that Yen Kuang on that occasion put a leg on the Emperor's abdomen. The next morning the Astronomer Royal reported that a "guest star" had trespassed against the "Imperial Throne" (*Ti-Tso*). (According to Chinese astrology this would be an extremely bad omen for the Emperor.) Showing not the least sign of alarm Wu-Ti smiled and said, "It was only my old acquaintance Yen Kuang." The above description is based on the *Biography of Yen Kuang* of the HHS. The *Kuei-chi Tien Lu* says that a "guest star" had trespassed against the asterism of the Emperor and gives a somewhat different account of the incidence. (*Yuan Chien Lei Han* 4/3b.)

Hsi regards it as a nova.

(68) *13th March*, 39. "On a *ting-wei* day in the first month of the 15th year of the Chien-Wu reign-period a (*hui*) comet appeared in the *Mao* (18th lunar mansion) [with its rays measuring

30 ft]. It moved slightly towards the NW and entered the *Ying-Shih* (13th lunar mansion). It then trespassed against *Li-Kung*. On an *i-wei* day in the third month [30th April] it reached the *Tung-Pi* (14th lunar mansion) and went out of sight after an appearance of 49 days." (HHS 20/1/11b; TCKM 9/83b; WHTK 286/7a; THHY 16/1b; W56.)

(69) *Between 17th December 46 and 15th January 47. The Chronicle of Koguryŏ* says, "In winter, during the 11th month of the third year of Minjung Wang a (*po*) comet was seen in the S and went out of sight after 20 days." (*Samguk Sagi* 14/5.)

(70) *9th June, 54. "On a chia-wu day in the intercalary month of the 30th year of the Chien-Wu reign-period 'Mercury' was seen at the 20th degree (tu) of the Tung-Ching (22nd lunar mansion). It developed a white vapour pointing SE and became a (hui) comet with rays measuring 5 ft (chhih). It moved towards the NE and came to a stop when it reached the western wall of the Tzu-Wei (Enclosure), at which it went out of sight on a chia-tzu day [9th July], after an appearance of 31 days."* (HHS 20/1/12a; TCKM 9/116b; WHTK 286/7b; THHY 16/1b; W57.) Williams gives 4th June, 55.

*A Sino-Western Calendar for Two Thousand Years, A.D. 1-2000*, says that the intercalary month fell on the third month of that year, but the text says that it fell on the fourth month. The dates given in the text are quite consistent and are found to agree among themselves.

*The Chronicle of Silla* says, "During the second month of the 31st year of Yuri Wang [27th February to 27th March] a (*po*) comet was observed at the Tzu-Wei (Enclosure)." (*Samguk Sagi* 1/6.)

(71) *12th December, 55. "On a chi-hai day in the tenth month of the 31st year of the Chien-Wu reign-period [6th December] the large star of Hsien-Yuan (i.e. Regulus) was trespassed, against by Mars. Seven days later [i.e. on 12th December] a 'guest star' with rays measuring, about 2 ft (chhih) moved in the SW direction and went out of sight on the 22nd day in the second month of the following year [27th March 56] when it came within about 6 ft (chhih) to the NE of the Yü-Kuei (23rd lunar mansion) after appearing for 113 days."* (HHS 20/1/12b; WHTK 394/6a; THHY 16/2a; B(1).)

This was obviously a comet, but Biot includes it in his *Catalogue of Extraordinary Stars*.

(72) *July, 59. The Chronicle of Silla* records, "During the sixth month of the third year of T'alhae Wang [30th June to 28th July] a (*po*) comet was seen at Thien-Chhuan." (*Samguk Sagi* 1/7.)

(73) *9th August, 60. "On a ting-mao day in the sixth month of the third year of the Yung-Phing reign-period a (hui) comet was seen at the north of Thien-Chhuan, measuring about 2 ft (chhih). [It moved] slightly to the north and arrived [at a point] south of the Khang (2nd lunar mansion). After 135 days it went out of sight."* (HHS 20/2/1b and 2/11a; TCKM 9/147a; WHTK 286/8a; THHY 16/2b; W58.)

Both the position and month of occurrence of the comet are rather similar to those of the Korean comet in July, 59 in No. 72. In view of what the *Korean Studies Guide* has said about the chronology for the early period in the *Samguk Sagi*, it is not impossible that No. 72 was the same comet as the Chinese comet mentioned here.

(74) *27th September, 61. "On a hsin-yu day in the eighth month of the fourth year of the Yung-Phing reign-period a 'guest star' was seen at the NW of Kêng-Ho pointing towards Kuan-So. It went out of sight after 70 days."* (HHS 20/2/1b; WHTK 294/6b; THHY 16/2b; B(1); W59.)

(75) *3rd May, 64. "On a kêng-hsü day in the third month of the seventh year of the Yung-Phing reign-period a 'guest star' with a white vapour measuring 2 ft (chhih) was seen at the south of Tso-Chih-Fa, outside the Tuan-Mên ('Main-Gate') (of the Thai-Wei Enclosure). It appeared for a period of 75 days."* (HHS com. 20/2/2a; WHTK 294/6b; B(1); L.)

(76) *29th July, 65. "On a jen-wu day in the sixth month of the eighth year of the Yung-Phing reign-period a (chhang-hsing) comet was seen extending 37 degrees (tu) within the Liu*

and the *Chang* (24th and 26th lunar mansions). It trespassed against *Hsien-Yuan*, penetrated *Thien-Chhuan* and coerced the *Thai-Wei* (Enclosure), while its vapour reached *Shang-Thai*. It went out of sight after 56 days." (HHS 20/2/2a; WHTK 286/8a; THHY 16/2b; W60.)

Williams gives the date as 4th June, 65. Chu Wên-Hsin gives the year as A.D. 66 by mistake and regards it as Halley's comet.

(77) 31st January, 66. "On a *wu-tzu* day in the 12th month [of the eighth year of the Yung-Phing reign-period] a 'guest star' was seen at the E." (HHS com. 20/2/2b; WHTK 294/6b; B(1).)

(78) 20th February, 66. "On a *wu-shen* day in the first month of the ninth year of the Yung-Phing reign-period a 'guest star' appeared at the *Chhien-Niu* (ninth lunar mansion) measuring 8 ft (*chhih*). It went out of sight after appearing for 50 days." (HHS 20/2/2b; WHTK 294/6b; THHY 16/2b; B(1); L; W61.)

The commentary of HHS adds, "It passed the (*Nan*-)*Tou* (eighth lunar mansion), *Chien-Hsing* and the *Chi* and the *Fang* (seventh and fourth lunar mansions). It passed the *Chio* and the *Khang* (first and second lunar mansions) and reached the *I* (27th lunar mansion). It was pointing towards the E."

This was probably Halley's comet. Cf. SCHÖVE (1955).

(79) December, 70–January, 71. "During the 11th month of the 13th year of the Yung-Phing reign-period [22nd December 70 to 19th January 71] a 'guest star' was seen at *Hsien-Yuan* for 48 days." (HHS com. 20/2/3a; WHTK 294/7a; B(1); L; Hsi.)

(80) 6th March, 71. "On a *wu-tzu* day in the first month of the 14th year of the Yung-Phing reign-period a 'guest star' was seen at the *Mao* (18th lunar mansion). It gradually went out of sight after 60 days at the right corner of *Hsien-Yuan*." (HHS 20/2/3a; WHTK 294/7a; THHY 16/2b; B(1) W62.)

Williams says that it disappeared at the right of the *Chio* (first lunar mansion).

(81) 14th July, 75. "On a *chi-wei* day in the sixth month of the 18th year of the Yung-Phing reign-period a (*hui*) comet appeared at the *Chang* (26th lunar mansion) measuring 3 ft (*chhih*). It turned to the south of *Lang-Chiang* and entered the *Thai-Wei* (Enclosure)." (HHS 20/2/4a; TCKM 9/184b; WHTK 286/8a; THHY 16/3a; W63.)

(82) 7th October, 76. "On a *kêng-yin* day in the eighth month of the first year of the Chien-Chhu reign-period a (*hui*) comet appeared at the *Thien-Shih* (Enclosure) measuring 2 ft (*chhih*). It moved slowly and entered within 3 degrees (*tu*) of the *Chhien-Niu* (ninth lunar mansion) and gradually went out of sight after a total of 40 days." (HHS 20/2/4a and 3/6a; TCKM 10/3b; WHTK 286/8b; THHY 16/3a; W64.)

Williams gives 9th August, 76.

(83) 23rd January, 77. "On a *wu-yin* day in the 12th month of the first year of the Chien-Chhu reign-period a (*hui*) comet was seen at 3 degrees (*tu*) within the *Lou* (16th lunar mansion) measuring 8 to 9 ft (*chhih*). It slowly entered the *Tzu-Wei* (Enclosure) and gradually went out of sight after 106 days." (HHS 20/2/4b; TCKM 10/7a; WHTK 286/8b; THHY 16/3b; W65.)

The *Thung Chih* (74/857) says that this occurred in the second year of the Chien-Chhu reign-period and lasted 160 days.

(84) April, 79. *The Chronicle of Silla* says, "During the second month of the 23rd year of T'alhae Wang [22nd March to 20th April] a (*hui*) comet was first seen at the E and then at the W, disappearing after 20 days." (*Samguk Sagi* 1/8.)

(85) 25th May, 84. "On a *ting-ssu* day in the fourth month of the first year of the Yuan-Ho reign-period a 'guest star' appeared in the morning at the E at 8 degrees (*tu*) within the *Wei* (17th lunar mansion) measuring 3 ft (*chhih*). It passed *Ko-Tao* and entered the *Tzu-Wei* (Enclosure), where it remained for 40 days before going out of sight." (HHS 20/2/5a; WHTK 294/7a; THHY 16/3b; B(1); W66.)

Biot regards this comet as nova and gives the date as 4th June.



(86) 1st June, 85. *The Chronicle of Paekche* says, "On an *i-ssu* day in the fourth month of the ninth year of Kiru Wang a 'guest star' entered the *Tzu-Wei* (Enclosure)." (*Samguk Sagi* 23/6.)

*The Chronicle of Silla* says, "In summer, in the fourth month of the sixth year of P'asa Wang (13th May to 10th June) a 'guest star' entered the *Tzu-Wei* (Enclosure)." (*Samguk Sagi* 1/8.)

(87) 12th January, 101. "On a *kuei-yu* night in the 11th month of the 12th year of the Yung-Yuan reign-period a greyish vapour measuring 30 ft (3 *chang*) rose from the NE of *Thien-Yuan* ("Celestial Orchard"), pointing at *Chün-Shih*. It was there for ten days." (HHS 20/2/10a; THHY 16/4b; W67.)

Williams gives 7th January, 102.

(88) 30th December, 101. "On an *i-chhou* day in the 11th month of the 13th year of the Yung-Yuan reign-period a small 'guest star' appeared at the fourth star of *Hsien-Yuan*. It was bluish-yellow in colour." (HHS 20/2/10b; WHTK 294/7a; THHY 16/5a; B(1); L; Hsi.)

(89) 30th May, 104. "On a *ting-wei* day in the fourth month of the 16th year of the Yung-Yuan reign-period a white vapour like loose cotton was developed at the *Tzu-Wei* (Enclosure). On a *wu-wu* day [10th June] the 'guest star' left the *Tzu-Wei* (Enclosure) and moved westward to the *Mao* (18th lunar mansion). On a *jen-shen* day in the fifth month [24th June] it went out of sight." (HHS 20/2/10b; WHTK 294/7b; THHY 16/5a; B(1).)

Biot gives 10th June, basing on the WHTK which omits the first part of the observation.

(90) 13th September, 107. "On a *wu-shen* day in the eighth month of the first year of the Yung-Chhu reign-period a 'guest star' appeared at the SW of the *Tung-Ching* (22nd lunar mansion) and *Hu*." (HHS 20/2/12a; WHTK 294/7b; THHY 16/5b; B(1); L; Hsi.)

Hsi says that it has been identified to be a nova near NGC2452.

(91) January, 110. "During the 12th month of the third year of the Yung-Chhu reign-period [9th January to 6th February] a (*hui*) comet was seen at the south of *Thien-Yuan* ('Celestial Pasture') pointing NE. It measured 6 to 7 ft (*chhih*) and was of a greyish colour." (HHS 20/2/13a; TCKM 10/91a; WHTK 286/8b; THHY 16/5b; W68.)

(92) 27th July, 110. "On a *ping-tzu* day in the sixth month of the fourth year of the Yung-Chhu reign-period a 'guest star' as large as a pear, with a greyish colour and rays measuring 2 ft (*chhih*), was seen pointing SW towards *Shang-Khai*." (HHS 20/2/13b; WHTK 294/7b; THHY 16/5b; B(1).)

Biot copies the wrong date of *chia-tzu* day in the sixth month of the third year of the WHTK and gives 25th July, 108.

(93) 15th January, 116. "On a *chia-wu* day in the 11th month of the third year of the Yuan-Chhu reign-period a 'guest star' was seen in the W. On a *chi-hai* day [20th January] it was at the south of the *Hsü* and the *Wei* (11th and 12th lunar mansions). It went as far as the *Wei* and the *Mao* (17th and 18th lunar mansions)." (HHS 20/2/14a; WHTK 294/7b; THHY 16/6a; B(1).)

Neither of the two days fell in the 11th month that year, but fell on the 12th. The "11th month" is a likely misprint for "12th month". WHTK gives "the second year of the Yuan-Chhu reign-period", which is copied by Biot, and hence the latter gives the date 16th November, 115, and criticizes the date which Gaubil has correctly given.

(94) December, 125 – January, 126.<sup>1</sup> "During the 11th month of the fourth year of the Yen-Kuang reign-period [13th December, 125 to 11th January, 126] a 'guest star' was seen at the *Thien Shih* (Enclosure)." (HHS 20/2/15b; WHTK 294/8a; THHY 16/6b; B(1); L; Hsi.)

WHTK gives "the third year". Biot mistakes it as "the second year" and gives "December, 123".

(95) 23rd March, 126. "On a *chia-wu* day in the second month of the first year of the Yung-Chien reign-period a 'guest star' entered the *Thai-Wei* (Enclosure)." (HHS com. 20/2/17a; TCKM com. 11/3b.)

(96) *September–October*, 128. *The Chronicle of Silla* says, “In autumn, during the eighth month of the 17th year of Chima Wang [12th September to 11th October] a (*chhang-hsing*) comet stretched across the heavens.” (*Samguk Sagi* 1/11.)

(97) *29th January*, 131. “On a *jen-shen* day in the 12th month of the sixth year of the Yung-Chien reign-period a ‘guest star’ was seen, with its rays measuring over 2 ft (*chhih*) and pointing SW. Its colour was grey and it was found at 6 degrees (*tu*) within the *Chhien-Niu* (ninth lunar mansion).” (HHS 20/2/18a; WHTK 294/8a; THHY 16/7a; B(1).)

Biot gives the year as 132.

(98) 131. “During the sixth year of the Yung-Chien reign-period a (*hui*) comet appeared at the (*Nan*-)Tou and the (*Chhien*-)Niu (eighth and ninth lunar mansions). It went out of sight at the *Hsü* and the *Wei* (11th and 12th lunar mansions).” (WHTK 286/8b; W69.)

This might be the same comet as that on 29th January, 131 in No. 97.

(99) *8th February*, 133. “On a *wu-tzu* day in the intercalary (12th) month of the first year of the Yang-Chia reign-period a ‘guest star’ with a white vapour measuring 2 ft (*chhih*) in width and 50 ft (5 *chang*) in length was seen at the SW of *Thien-Yuan* (‘Celestial Pasture’).” (HHS 20/2/18b; WHTK 294/8a; THHY 16/7a; B(1).)

The commentary of the HHS also mentions an alternative source and gives the date as a *chi-chhou* day, i.e., 9th February, 133.

(100) *27th March*, 141. “On a *ting-ssu* day in the second month of the sixth year of the Yung-Ho reign-period a (*hui*) comet appeared in the E measuring 6 to 7 ft (*chhih*), with a bluish-white colour and pointing SW towards the *Ying-Shih* (13th lunar mansion) and *Fên-Mu*. On a *ting-chhou* day [16th April] the comet was at one degree (*tu*) within the *Khuei* (15th lunar mansion) measuring 6 ft (*chhih*). On a *kuei-wei* day [22nd April] it appeared at dusk and passed the *Mao* and the *Pi* (18th and 19th lunar mansions) at the NW. On a *chia-shen* day [23rd April] it was at the *Tung-Ching* (22nd lunar mansion). It then passed the *Yü-Kuei*, the *Liu*, the *Chhi-Hsing* and the *Chang* (23rd, 24th, 25th and 26th lunar mansions) with its rays extending to *San-Thai*. It went out of sight when it came in the midst of *Hsien-Yuan*.” (HHS 20/2/21a; TCKM 11/36a; WHTK 286/8b; THHY 16/8b; W70.)

Crommelin regards this as Halley’s comet. Cf. CHU WÊN-HSIN (1933).

(101) *19th October*, 149. “On an *i-chhou* day in the eighth month of the third year of the Chien-Ho reign-period a (*hui*) comet with rays measuring 5 ft (*chhih*) appeared within the *Thien-Shih* (Enclosure) pointing SE and with a yellowish-white colour. It went out of sight on a *wu-chhen* day in the ninth month [22nd October].” (HHS 20/3/1a; TCKM 11/57a; WHTK 286/9b; THHY 16/8a; W71.)

*The Chronicle of Silla* says, “In autumn, during the eighth month of the 16th year of Ilsǒng Wang [20th September to 19th October] a (*po*) comet was seen at the *Thien-Shih* (Enclosure).” (*Samguk Sagi* 1/12.)

(102) *November*, 153. *The Chronicle of Silla* says, “In winter, during the tenth month of the 20th year of Ilsǒng Wang [4th November to 3rd December] a (*hui*) comet was seen first at the E and then at the NE.” (*Samguk Sagi* 1/12.)

(103) *31st January*, 154. *The Chronicle of Koguryǒ* says, “On the last day in the 12th month of the eighth year of Ch’adae Wang a ‘guest star’ trespassed against the moon.” (*Samguk Sagi* 15/6.)

(104) *March–April*, 158. *The Chronicle of Koguryǒ* says, “During the second month of the 13th year of Ch’adae Wang [18th March to 15th April] a (*po*) comet was seen at *Pei-Tou*.” (*Samguk Sagi* 15/6.)

(105) *14th June*, 161. “On a *hsin-yu* day in the fifth month of the fourth year of the Yen-Hsi reign-period a ‘guest star’ appeared at the *Ying-Shih* (13th lunar mansion). It advanced a little and developed a ray measuring about 5 ft (*chhih*). When it came within 1 degree (*tu*) of

the *Hsin* (fifth lunar mansion) it turned into a (*hui*) comet." (HHS 20/3/3a; TCKM 11/93a; WHTK 286/9b; THHY 16/8b; W72.)

(106) *September*, 178. "During the eighth month of the first year of the Kuang-Ho reign-period [31st August to 29th September] a (*hui*) comet appeared north of the *Khang* (second lunar mansion) and was then seen entering the *Thien-Shih* (Enclosure). It was several feet (*chhih*) long, but gradually increased to 50 or 60 ft (5 to 6 *chang*), and was of a red colour. It passed more than ten lunar mansions, and after over 80 days it went out of sight when it was at *Thien-Yuan* ['Celestial Pasture']." (HHS 20/3/6b; TCKM 12/45b; WHTK 286/9b; THHY 16/9b; W73.)

(107) *Winter*, 180. "During the winter of the third year of the Kuang-Ho reign-period a (*hui*) comet appeared at *Lang* and *Hu* moving eastward. It went out of sight when it reached the *Chang* (26th lunar mansion)." (HHS 20/3/7a; TCKM 12/51a; WHTK 286/10a; W74.)

(108) *August-September*, 182. "During the seventh month of the fifth year of the Kuang-Ho reign-period [17th August to 15th September] a (*hui*) comet was seen below *San-Thai* moving towards the E. It entered the *Thai-Wei* (Enclosure) and reached *Thai-Tzu* and *Hsing-Chhen*. After more than 20 days it went out of sight." (HHS 20/3/7a; TCKM 12/55b; WHTK 286/10a; THHY 16/10a; W75.)

WHTK gives "the third year" instead of the fifth year.

*The Chronicle of Koguryō* says, "In autumn, during the seventh month of the fourth year of Kogukch'ōn Wang a (*po*) comet appeared at the *Thai-Wei* (Enclosure)." (*Samguk Sagi* 16/3.)

(109) *7th December*, 185. "On a *kuei-hai* day in the tenth month of the second year of the Chung-Phing reign-period a 'guest star' appeared at *Nan-Mén*. Its size was as large as a mat, while its five colours were fluctuating. It became smaller and went out of sight during the sixth month of the following year [5th July to 2nd August, 186]." (HHS 20/3/8b; WHTK 294/8b; THHY 16/8b; B(1); W76; L; Hsi.)

Hsi says that it has been suggested to be a supernova, and a radio source, near Wolf-Rayet star—61°4431. Biot gives 173 instead of 185.

(110) *November*, 186. *The Chronicle of Paekche* says, "In winter, during the tenth month of the 21st year of Ch'ogo Wang [31st October to 28th November] a (*po*) comet appeared in the NW for a period of 20 days." (*Samguk Sagi* 23/8.)

(111) *March-April*, 188. "During the second month of the fifth year of the Chung-Phing reign-period [16th March to 13th April] a (*hui*) comet appeared at the *Khuei* (15th lunar mansion). After retrograding and entering the *Tzu-Wei* (Enclosure) it appeared three times and went out of sight after more than 60 days." (HHS 20/3/9a; TCKM 12/78a; WHTK 286/10a; THHY 16/11b; W77.)

WHTK gives "the fifth year of the Kuang-Ho reign-period".

(112) *28th July*, 188. "On a *ting-mao* day in the sixth month of the fifth year of the Chung-Phing reign-period a 'guest star' as large as a vessel with a capacity of 3 pints appeared at *Kuan-So*. It moved SW and entered the *Thien-Shih* (Enclosure). It went out of sight when it reached the *Wei* (sixth lunar mansion)." (HHS 20/3/9a; WHTK 294/8b; THHY 16/11b; B(1); W78.)

WHTK gives the wrong year again—"the fifth year of the Kuang-Ho reign-period" instead of "the fifth year of the Chung-Phing reign-period". Hence the mistake in Biot's *Catalogue*, which gives the date as 20th June, 182.

Williams neglects the leap year and gives 29th July.

(113) *October*, 191. "During the ninth month of the second year of the Chhu-Phing reign-period of Hsiao-Hsien(-Ti) [6th October to 4th November] a [*Chhih-Yu* banner] comet was seen. It measured over 100 ft (10 *chang*) and was white in colour. It appeared at the south of the *Chio* and the *Khang* (first and second lunar mansions)." (HHS 20/3/9b; WHTK 286/10a; THHY 16/11b; W79.)

*The Chronicle of Silla* says, "In autumn, during the ninth month of the eighth year of Pörhyu Wang a (*Chhik-Yu* banner) comet appeared at the *Chio* and the *Khang* (first and second lunar mansions)." (*Samguk Sagi* 2/3.)

*The Chronicle of Paekche* also records the same comet during the ninth month of the 26th year of Ch'ogo Wang. (*Samguk Sagi* 23/8.)

The WHTK gives "the third year of the Chhu-Phing reign-period", hence the date October, 192, in Williams' *catalogue*.

(114) *November–December*, 193. "During the tenth month of the fourth year of the Chhu-Phing reign-period [12th November to 11th December] a (*po*) comet appeared between the two stars of the *Chio* (first lunar mansion) and moved towards the NE. After entering the *Thien-Shih* (Enclosure) it went out of sight." (HHS 20/3/10a; TCKM 12/131b; WHTK 286/10a; THHY 16/11b; W80.)

(115) *6th November*, 200. "On a *hsin-hai* day in the tenth month of the fifth year of the Chien-An reign-period a (*po*) comet was seen at *Ta-Liang*." (HHS 20/3/10a; TCKM 13/76a; WHTK 286/10b; THHY 16/11a; W81.)

Williams overlooks the leap year and gives 7th November.

(116) *November–December*, 204. *The Chronicle of Paekche* says, "In winter, during the tenth month of the 39th year of Ch'ogo Wang [10th November to 9th December] a (*po*) comet was seen at the *Tung-Ching* (22nd lunar mansion)." (*Samguk Sagi* 23/9.)

(117) *December*, 204–*January*, 205. "During the 11th month of the ninth year of the Chien-An reign-period [10th December, 204 to 7th January, 205] a (*po*) comet appeared at the *Tung-Ching* and the *Yü-Kuei* (22nd and 23rd lunar mansions). It entered *Hsien-Yuan* and the *Thai-Wei* (Enclosure)." (HHS 20/3/10b; TCKM 13/89b; WHTK 286/10b; THHY 16/11a; W82.)

TCKM gives "the tenth month".

(118) *February*, 206. "During the first month of the 11th year of the Chien-An reign-period [27th January to 25th February] a (*po*) comet was seen at *Pei-Tou*. Its head was within *Pei-Tou*, but its tail penetrated the *Tzu-Wei* (Enclosure) and the Pole Star." (HHS 20/3/10b; TCKM 13/95a; WHTK 286/10b; THHY 16/11a; W83.)

(119) *10th November*, 207. "On a *hsin-mao* day in the tenth month of the 12th year of the Chien-An reign-period a (*po*) comet appeared at *Chhun-Wei* (i.e., from the 17th degree of *Chang*, the 26th lunar mansion to the 11th degree of *Chen*, the 28th lunar mansion)." (HHS 20/3/10b; TCKM 13/100a; WHTK 286/10b; THHY 16/11a; W84.)

(120) *January–February*, 213. "During the 12th month of the 17th year of the Chien-An reign-period [10th January to 7th February] a (*po*) comet appeared at *Wu-Chu-Hou*." (HHS 20/3/11a; TCKM 14/20a; WHTK 286/11a; THHY 16/11a; W85.)

(121) *November–December*, 217. *The Chronicle of Koguryō* says, "In winter, during the tenth month of the 21st year of Sansang Wang [17th November to 15th December] a (*po*) comet was seen in the NE." (*Samguk Sagi* 16/7.)

(122) *April–May*, 218. "During the third month of the 23rd year of the Chien-An reign-period [13th April to 12th May] a (*po*) comet appeared in the morning in the E. After more than 20 days it appeared in the evening in the W. It trespassed against and passed *Wu-Chhê*, the *Tung-Ching* (22nd lunar mansion), *Wu-Chu-Hou*, *Wên-Chhang*, the stars *Hou* and *Fei* of *Hsien-Yuan* and the *Thai-Wei* (Enclosure). Its rays were pointing towards *Ti-Tso*." (HHS 20/3/11b; TCKM 14/53b; WHTK 286/11a; THHY 16/11b; W86.)

This is probably Halley's comet; cf. PROCTOR and CROMMELIN (1937) p. 44.

(123) *4th November*, 222. "On a *chia-chhen* day in the ninth month of the third year of the Huang-Chhu reign-period of Wei-Wên-Ti a 'guest star' appeared within the *Tso-I-Mên* of the *Thai-Wei* (Enclosure)." (CS 13/17a; SShu 23/11a; WHTK 294/8b; B(1); W88; L; Hsi.)

(124) 9th December, 225. "On a *i-wei* day in the tenth month of the sixth year of the Huang-Chhu reign-period a (*po*) comet appeared at *Shao-Wei* passing *Hsien-Yuan*." (CS 13/17a; SShu 23/12b; WHTK 286/11a; W89).

(125) 3rd December, 232. "On a *ping-yin* day in the eleventh month of the sixth year of the Thai-Ho reign-period of Ming-Ti a (*po*) comet appeared at the *I* (27th lunar mansion) and near (the star) *Shang-Chiang* of the *Thai-Wei* (Enclosure)." (CS 13/17a; SShu 23/13b; WHTK 286/11b; W90.)

Williams overlooks the leap year and gives 4th December.

(126) 30th November, 236. "On a *chia-shen* day in the tenth month of the fourth year of the Chhing-Lung reign-period a (*po*) comet appeared at *Ta-Chhen* (Polaris) measuring 3 ft (*chhih*) in length. On an *i-yu* day (1st December) the comet appeared in the East and on a *chi-hai* day (15th December) it became a (*hui*) comet and trespassed against *Huan-Chê* and *Thien-Chi* (in Hercules)." (CS 13/17a; SShu 23/17a; TCKM 15/59b; WHTK 286/11b; W91 and W87.)

The WHTK says that on an *i-yu* day (1st December) the (*po*) comet was seen at the E and on a *chi-hai* day in the 11th month a (*hui*) comet trespassed against *Huan-chê* and *Thien-chi*.

(127) August, 238. "During the eighth month of the second year of the Ching-Chhu reign-period (29th July to 27th August) a (*hui*) comet measuring 3 ft (*chhih*) appeared at the *Chang* (26th lunar mansion). It then retrograded and moved westward until it went out of sight after 41 days." (CS 13/17b; SShu 23/18a; WHTK 286/11b; W92.)

The eighth month in the Chinese calendar normally fell around the month September. However, in this singular instance the Emperor Ming-Ti altered the third month of the first year of the Ching-Chhu reign-period (A.D. 237) by calling it the fourth month of that year, but after a period of 33 months he restored the order of the months in the usual way by introducing an extra 12th month for the third year of the same reign-period (cf. CS 17/4a). Unaware of this change, Williams gives the month as September.

(128) 30th September, 238. "On a *kuei-ssu* day in the tenth month of the second year of the Ching-Chhu reign-period a 'guest star' was observed at the *Wei* (12th lunar mansion), retrograding and moving to the north of *Li-Kung* and the south of *Thêng-Shê*. On a *chia-chhen* day (11th October) it trespassed against *Tsung-Hsing*. It went out of sight on a *chi-yu* day (16th October)." (CS 13/17b; SShu 23/18b; WHTK 294/9a; B(1); W93.)

The same calendrical change described in No. 127 also applies in this case. Biot and Williams are both unaware of it and give the date as 29th November.

(129) 10th November, 240. "On an *i-yu* day in the tenth month of the first year of the Chêng-Shih reign-period of Shao-Ti a (*hui*) comet measuring 20 ft (2 *chang*) [SShu says, '30 ft'] appeared at the *Wei* (sixth lunar mansion), sweeping across the *Chhien-Niu* (ninth lunar mansion) and trespassing against Venus. On a *chia-tzu* day in the 11th month (19th December) it proceeded to trespass against *Yü-Lin*." (CS 13/17b; SShu 23/19a; WHTK 286/12a; W94.)

Williams gives the two dates as 5th November and 14th December.

(130) 18th September, 245. "On a *wu-wu* day in the eighth month of the sixth year of the Chêng-Shih reign-period a white (*hui*) comet measuring 2 ft (*chhih*) appeared at the *Chhi-Hsing* (25th lunar mansion) moving towards the *Chang* (26th lunar mansion) and disappeared after 23 days." (CS 13/17b; SShu 23/20a; WHTK 286/12a; W95.)

(131) 16th January, 247. "On a *kuei-hai* day in the 11th month of the seventh year of the Chêng-Shih reign-period a (*hui*) comet measuring 1 ft (*chhih*) appeared for 156 days at the *Chen* (28th lunar mansion)." (CS 13/17b; SShu 23/20a; WHTK 286/12a; W96.)

The *kuei-hai* day fell on the 12th month rather than on the 11th month. This account is not found in the *Chronicle* of the CS. It is probable that the word "11th" is a misprint for "12th". Williams gives the correct date, because his system of calendrical conversion does not demand an exact knowledge of the months, but only uses the month as a rough guide.

(132) *April-May*, 248. "During the third month of the ninth year of the Chêng-Shih reign-period [11th April to 9th May] a bluish-white (*hui*) comet with rays measuring 6 ft (*chhih*) and pointing towards the SW, was seen at the *Mao* (18th lunar mansion)." (CS 13/17b; SShu 23/20a; WHTK 286/12a; W97.)

(133) *August-September*, 248. "During the seventh month of the ninth year of the Chêng-Shih reign-period [7th August to 9th September] a (*hui*) comet appeared for 42 days at the *I* (27th lunar mansion), measuring 2 ft (*chhih*) and moving towards the *Chen* (28th lunar mansion)." (CS 13/17b; SShu 23/20a; WHTK 286/12a.)

(134) *21st December*, 251. "On a *kuei-hai* day in the 11th month of the third year of the Chia-Phing reign-period a (*po*) comet appeared for a duration of 90 days moving westward from the *Ying-Shih* (13th lunar mansion)." (CS 13/18a; SShu 23/22b; WHTK 286/12b; W98.)

A misprint in the SShu gives "*kuei-wei*" instead of "*kuei-hai*".

(135) *24th March*, 252. "On a *ting-yu* day in the second month of the fourth year of the Chia-Phing reign-period a (*hui*) comet measuring 50 to 60 ft (5 to 6 *chang*), appeared in the W at the *Wei* (17th lunar mansion). It was white in colour. Its rays pointed S and penetrated the *Shen* (21st lunar mansion). It went out of sight after a duration of 20 days." (CS 13/18a; SShu 23/22b; WHTK 286/12b; W90.)

Williams overlooks the leap year and gives 25th March.

(136) *December, 253-January, 254*. "During the 11th month of the fifth year of the Chia-Phing reign-period [8th December, 253 to 5th January, 254] a (*hui*) comet measuring 50 ft (5 *chang*) appeared at the *Chen* (28th lunar mansion) beginning from the west of *Tso-Chih-Fa* in the *Thai-Wei* (Enclosure) and pointing SW. After 190 days it went out of sight." (CS 13/18a; SShu 23/22b; WHTK 286/12b; W100.)

(137) *December, 254*. "During the 11th month of the first year of the Chêng-Yuan reign-period of Kao-Kuei-Hsiang-Kung [27th November to 26th December] a white vapour was seen coming out from the side of the *Nan-Tou* (8th lunar mansion). Its width extended several tens of feet (several *chang*), while its length traversed across the heavens. Wang Su called it a '*Chhih-Yu* banner'." (CS 13/18a; SShu 23/23b; WHTK 286/13a.)

It is difficult to say from the above whether this was a comet, but the WHTK also says, "During the first year of the Wu-Fêng reign-period of the Wu Kingdom (A.D. 254) a (*chhang-hsing*) comet appeared at the (*Nan*-)*Tou* and the (*Chhien*-)*Niu* (eighth and ninth lunar mansions)." (WHTK 286/13a.)

(138) *February, 255*. "During the first month of the second year of the Chêng-Yuan reign-period [25th January to 23rd February] a (*hui*) comet appeared at the divisions of Wu and Chhu extending across the heavens in the NW." (CS 13/18a; WHTK 286/13a; W101.) The region from the 12th degree (*tu*) of the *Nan-Tou* (eighth lunar mansion) to the eighth degree (*tu*) of the *Hsü-Nü* (tenth lunar mansion) was the division corresponding to the Wu and Yüeh States, and that from the 17th degree (*tu*) of the *Chang* (26th lunar mansion) to the 11th degree (*tu*) of the *Chen* (28th lunar mansion) was that corresponding to the Chhu State. (CS 11/18a and 11/18b.) Williams calls them "*Woo Yue*, stars in Aquila".

(139) *December, 257-January, 258*. "During the 11th month of the second year of the Kan-Lu reign-period [23rd December, 257 to 21st January, 258] a white (*hui*) comet was seen at the *Chio* (first lunar mansion)." (CS 13/18b; SShu 23/25a; WHTK 286/13b; W102.)

(140) *23rd November, 259*. "On a *ting-chhou* day in the tenth month of the fourth year of the Kan-Lu reign-period a 'guest star' was seen within the *Thai-Wei* (Enclosure). After turning to the east it moved southwards and passed the *Shen* (28th lunar mansion) before it finally disappeared after a duration of seven days." (CS 13/18b; SShu 23/25b; WHTK 294/9a; B(1); W103.)

The *Thung Chih* (74/857) says that the comet appeared during the second year of the Kan-Lu reign-period (A.D. 257) and lasted 70 days.

(141) *July–August, 260.* *The Chronicle of Silla* says, “In autumn, during the seventh month of the 14th year of the Chônmhae Wang [25th July to 23rd August] a (*po*) comet appeared in the E for 25 days.” (*Samguk Sagi* 2/7.)

(142) *2nd December, 262.* “On a *jen-yin* day in the 11th month of the third year of the Ching-Yuan reign-period of Yuan-Ti a white (*hui*) comet measuring 5 in. (*tshun*) appeared at the *Khang* (second lunar mansion) and changed its course towards the north. After 45 days it went out of sight.” (CS 13/18b; SShu 23/26a; WHTK 286/13b; W104.)

(143) *June, 265.* “During the fifth month of the second year of the Hsien-Hsi reign-period [1st June to 30th June] a white (*hui*) comet measuring more than 10 ft (1 *chang*) was observed at *Wang-Liang* pointing towards the SE. It went out of sight after 12 days.” (CS 13/18b; SShu 23/26b; WHTK 286/13b; W105.)

(144) *18th February, 268.* “On a *ping-hsü* day in the first month of the fourth year of the Thai-Shih reign-period of the Emperor Wu-Ti a bluish-white (*hui*) comet appeared at the *Chen* (28th lunar mansion). It moved towards the NW and then turned E.” (CS 13/18b; SShu 23/27a; WHTK 286/14a; W106.)

(145) *October–November, 269.* “During the ninth month of the fifth year of the Thai-Shih reign-period [13th October to 10th November] a (*po*) comet appeared within the *Tzu-Wei* (Enclosure).” (CS 13/19a; SShu 23/27b; TCKM 16/75a; WHTK 286/14a.)

*The Chronicle of Paekche* records the appearance of the same comet during the ninth month of the 36th year of Koi Wang. (*Samguk Sagi* 24/4.)

(146) *January–February, 275.* “During the 12th month of the tenth year of the Thai-Shih reign-period [14th January to 12th February] a (*po*) comet appeared within the *Chen* (28th lunar mansion).” (CS 13/19a; SShu 23/27b; WHTK 286/14a; W107.)

(147) *23rd June, 276.* “On a *chia-hsü* day in the sixth month of the second year of the Hsien-Ning reign-period a (*po*) comet was seen at the *Ti* (third lunar mansion). During the seventh month (28th July to 26th August) the comet appeared at *Ta-Chio* (Arcturus). During the eighth month [27th August to 24th September] it appeared at the *Thai-Wei* (Enclosure) stretching as far as the *I* (27th lunar mansion), *Pei-Tou* and *San-Thai*.” (SShu 23/27b; CS 13/19a; WHTK 286/14a; W108.) The cyclical day *chia-hsü* fell on the fifth month, but not on the sixth.

(148) *February–March, 277.* “During the first month of the third year of the Hsien-Ning reign-period [20th February to 21st March] a (*po*) comet appeared at the W. During the third month [20th April to 19th May] it appeared at the *Wei* (17th lunar mansion), during the fourth month [20th May to 17th June] it appeared at *Nü-Yü* ( $\pi$  Leonis), during the fifth month [18th June to 17th July] it appeared at the E and during the seventh month [16th August to 14th September] it appeared within the *Tzu-Wei* (Enclosure).” (CS 13/19a; SShu 23/28a; TCKM 16/102a; WHTK 286/14b; W109.)

(149) *May–June, 278.* “During the fourth month of the fourth year of the Hsien-Ning reign-period [9th May to 7th June] a (*Chhieh-Yu* banner) comet appeared within the *Tung-Ching* (22nd lunar mansion).” (CS 13/19a; SShu 23/28b; WHTK 286/14b.)

(150) *April, 279.* “During the third month of the fifth year of the Hsien-Ning reign-period [30th March to 27th April] a (*po*) comet appeared at the *Liu* (24th lunar mansion). It appeared during the fourth month [28th April to 27th May] at *Nü-Yü* and during the seventh month [26th July to 24th August] within the *Tzu-Wei* (Enclosure).” (CS 13/19a; SShu 23/28a; WHTK 286/14b; W110.)

(151) *September, 281.* “During the eighth month of the second year of the Thai-Kang reign-period [1st September to 29th September] a (*po*) comet appeared at the *Chang* (26th lunar mansion).” (CS 13/19a; SShu 23/29b; WHTK 286/15a; W111.)

(152) *December*, 281. "During the 11th month of the second year of the Thai-Khang reign-period [28th November to 27th December] there was a (*po*) comet at *Hsien-Yuan*." (CS 13/19a; WHTK 286/15a; W112.)

(153) *22nd April*, 283. "On a *wu-shen* day in the third month of the fourth year of the Thai-Khang reign-period a (*po*) comet was seen in the SW." (CS 13/19a; SShu 23/29b; WHTK 286/15a; W113.)

(154) *October–November*, 287. "During the ninth month of the eighth year of the Thai-Khang reign-period [24th October to 22nd November] a (*po*) comet measuring hundreds of feet appeared for a duration of over 10 days at the *Nan-Tou* (eighth lunar mansion)." (CS 13/19a; SShu 23/29b; WHTK 286/15a; W114.)

Williams gives "the eighth month", hence September, 287.

(155) *May*, 290. "During the fourth month of the first year of the Thai-Hsi reign-period [27th April to 25th May] a 'guest star' was seen at the *Tzu-Wei* (Enclosure)." (CS 13/19a; SShu 23/30a; WHTK 286/15a; W115; L; Hsi.)

The WHTK gives the Yung-Hsi reign-period.

(156) *May*, 295. "During the fourth month of the fifth year of the Yuan-Khang reign-period of Hui-Ti [1st May to 30th May] a (*po*) comet appeared at the *Khuei* (15th lunar mansion), extending as far as *Hsien-Yuan* and the *Thai-Wei* (Enclosure). It passed *San-Thai* and *Ta-Ling*." (CS 13/19a; SShu 24/1b; WHTK 286/15a; W116.)

Chu Wên-Hsin regards it as Halley's comet, and Williams gives the wrong year 296 A.D. Cf. SCHÖVE (1955).

(157) *October–November*, 299. *The Chronicle of Koguryō* says, "In autumn, during the ninth month of the eighth year of Pongsang Wang [12th October to 9th November] a 'guest star' trespassed against the moon." (*Samguk Sagi* 5/6.)

(158) *April–May*, 300. "During the third month of the first year of the Yung-Khang reign-period [6th April to 4th May] an 'ominous star' was seen in the S." (CS 13/19b; SShu 24/2b; TCKM 17/58a; W117; L; Hsi.)

Williams thinks that it was a meteor, but Lundmark disagrees. Hsi regards it as nova.

(159) *December*, 300–*January*, 301. "During the 12th month of the first year of the Yung-Khang reign-period [28th December, 300 to 25th January, 301] a (*hui*) comet was seen west of the *Chhien-Niu* (ninth lunar mansion) pointing towards the *Thien-Shih* (Enclosure)." (CS 13/19b; SShu 24/3a; WHTK 286/15b; W118.)

*The Chronicle of Koguryō* says, "During the 12th month of the first year of Mich'ōn Wang a (*po*) comet appeared in the E." (*Samguk Sagi* 5/7.)

(160) *May–June*, 301. "During the fourth month of the second year of the Yung-Khang reign-period [24th May to 22nd June] a (*hui*) comet appeared at the (divison of) Chhi." (CS 13/20a; SShu 24/3a; WHTK 286/15b; W119.)

The division of Chhi corresponds to the region between the eighth degree of the *Hsü-Nü* (tenth lunar mansion) and the 15th degree of the *Wei* (12th lunar mansion), but Williams misinterprets it as "the star *Tse*".

(161) *May–June*, 302. "During the fourth month of the first year of the Thai-An reign-period [14th May to 11th June] a (*hui*) comet appeared in the day." (CS 13/20a; WHTK 286/15b; W120.)

*The Chronicle of Paekche* says, "In summer, during the fourth month of the fifth year of Punsō Wang a (*hui*) comet appeared in daylight." (*Samguk Sagi* 24/4.)

(162) *April*, 303. "During the third month of the second year of the Thai-An reign-period [3rd April to 2nd May] a (*hui*) comet was observed at the E pointing towards *San-Thai*." (CS 13/20a; SShu 24/4b; WHTK 286/15b; W121.)



(163) *June–July*, 304. “During the fifth month of the first year of the Yung-Hsing reign-period [19th June to 18th July] a ‘guest star’ guarded (*shou*) the *Pi* (19th lunar mansion).” (CS 13/20a; SShu 24/4a; WHTK 294/9a; B(1); W122; L; Hsi.)

Williams gives the month as May.

(164) *September*, 305. “During the eighth month of the second year of the Yung-Hsing reign-period [5th September to 4th October] a (*po*) comet appeared at the *Mao* (18th lunar mansion) and the *Pi* (19th lunar mansion).” (CS 13/20a; SShu 24/7a; WHTK 286/16a; W123; Hsi.)

(165) *21st November*, 305. “On a *ting-chhou* day in the tenth month of the second year of the Yung-Hsing reign-period a (*po*) comet appeared at *Pei-Tou*.” (CS 13/20a; SShu 24/7a; TCKM 18/5a; WHTK 286/16a; W124.)

(166) *September–October*, 315. *The Chronicle of Koguryō* says, “In autumn, during the eighth month of the 16th year of Mich’ŏn Wang [15th September to 14th October] a (*po*) comet was seen at the NE.” (*Samguk Sagi* 17/7.)

(167) *August–September*, 329. “During the seventh month of the fourth year of the Hsien-Ho reign-period of Chhêng-Ti [11th August to 9th September] a (*po*) comet appeared at the NW trespassing against *Pei-Tou*. It went out of sight after 23 days.” (CS 13/20a; SShu 24/12a; WHTK 286/16a; W125.)

(168) *16th February*, 336. “On a *hsin-ssu* day in the first month of the second year of the Hsien-Khang reign-period a (*hui*) comet appeared in the evening at the west within the *Khuei* (15th lunar mansion).” (SC 13/20a; SShu 24/14a; TCKM 19/96a; WHTK 286/16a; W126.)

*The Chronicle of Paekche* records the appearance of the same comet during the 33rd year of Piryu Wang. (*Samguk Sagi* 24/5.)

(169) *25th March*, 340. “On a *kêng-chhen* day in the second month of the sixth year of the Hsien-Khang reign-period a (*po*) comet was seen at the *Thai-Wei* (Enclosure).” (CS 13/20a; TCKM 20/14b; WHTK 286/16b; W127.)

WHTK gives “in the third month”, and Williams gives the date as 5th March.

(170) *8th December*, 343. “During the sixth day in the 11th month of the first year of the Chien-Yuan reign-period of Khang-Ti a white (*hui*) comet measuring 7 ft (*chhih*) appeared within the *Khang* (second lunar mansion).” (CS 13/20b; SShu 24/17b; WHTK 286/16b; W128.)

(171) *2nd December*, 349. “On an *i-mao* day [possible misprint for ‘*chi-mao* day’] in the 11th month of the fifth year of the Yung-Ho reign-period of Mu-Ti a white (*hui*) comet measuring 10 ft (1 *chang*) appeared within the *Khang* (second lunar mansion) with its rays pointing towards the west. On a *ting-chhou* day in the first month of the sixth year [29th January, 350] a (*hui*) comet was again seen at the *Khang* (second lunar mansion).” (CS 13/20b; SShu 24/20a; WHTK 286/16b; W129.)

*The Chronicle of Mu-Ti* says, “On a *ting-chhou* day in the intercalary second month of the sixth year of the Yung-Ho reign-period (30th March) a (*hui*) comet was seen.” (CS 13/20b.)

Williams gives the two dates as 23rd November, 349 and 13th February, 350.

(172) *26th June*, 358. “On a *ting-hai* day in the fifth month of the second year of the Shêng-Phing reign-period a (*hui*) comet was seen extending from *Thien-Chhuan* to the *Wei* (17th lunar mansion).” (CS 13/20b; SShu 24/23b; WHTK 286/16b; W130; Hsi.)

Williams gives the date as 1st July. Hsi regards it as a nova.

(173) *August–September*, 363. “During the eighth month of the first year of the Hsing-Ning reign-period of Ai-Ti [26th August to 23rd September] a (*po*) comet was seen at the *Chio* and the *Khang* (first and second lunar mansions). It then entered the *Thien-Shih* (Enclosure).” (CS 13/20b; SShu 24/26a; TCKM 21/10b; WHTK 286/17a; W131.)

(174) *March–April*, 369. “During the second month of the fourth year of the Thai-Ho reign-period of Hai-Hsi-Kung [24th March to 22nd April] a ‘guest star’ appeared at the western wall of the *Tzu-Wei* (Enclosure). It went out of sight during the seventh month [19th August to 17th September].” (CS 13/20b; SShu 24/27a; WHTK 294/9b; B(1) W132; L; Hsi.)

This was once thought to correspond with the radio source ( $\alpha = 23^{\text{h}}21^{\text{m}}$ ,  $\delta = 58^{\circ}$ ), but Hsi disagrees.

(175) *4th March*, 374. “On a *ting-ssu* day in the first month [should read ‘second month’] of the second year of the Ning-Khang reign-period of Hsiao-Wu-Ti a (*po*) comet appeared at the *Nü* and the *Hsü* (tenth and 11th lunar mansions). It then passed the *Ti*, the *Khang*, the *Chio*, the *Chen*, the *I* and the *Chang* (third, second, first, 28th, 27th and 26th lunar mansions). On a *ping-hsü* day [2nd April] in the third month the comet was seen at the *Ti* [third lunar mansion] as a *hui*.” (CS 13/20b; CS 9/4b; SShu 25/2a; WHTK 286/17a; W133.)

The astronomical chapters of both CS and SShu give “the first month”, but the “*ting-ssu* day” fell not on the first but the second month. *The Chronicle of Hsiao-Wu-Ti* in the CS says explicitly that the comet was seen during the second month, although the date is not given. WHTK gives “the first year of the Ning-Khang reign-period”, from which Williams derives the wrong date 9th March, 373. TCKM also makes a mistake with regard to the year saying, “During the first year of the Ning-Khang reign-period a (*hui*) comet was seen.” (TCKM 21/56b) CHU WÊN-HSIN (1933) regards it as Halley’s comet. The following observation may be the recurrence of the same comet after perihelion: “On a *ting-chhou* day in the ninth month [19th November] a (*po*) comet was seen at the *Thien-Shih* (Enclosure).” (CS 9/4b and 13/20b; WHTK 286/17a.)

(176) *October–November*, 383. *The Chronicle of Koguryō* says, “In autumn, during the ninth month of the 13th year of Sosurim Wang [13th October to 10th November] a (*po*) comet appeared in the NW.” (*Samguk Sagi* 18/3.)

(177) *April–May*, 386. “During the third month of the 11th year of the Thai-Yuan reign-period [15th April to 14th May] a ‘guest star’ appeared at the *Nan-Tou* (eighth lunar mansion). It went out of sight during the sixth month [13th July to 10th August].” (CS 31/21a; SShu 25/5a; WHTK 294/9b; B(1); W134; L; Hsi.) It is said to be found near NGC 6644; cf. Hsi Tsê-Tsung (1958).

(178) *7th August*, 390. “On a *ting-ssu* day in the seventh month of the 15th year of the Thai-Yuan reign-period a (*po*) comet appeared at *Pei-Ho*. It passed the *Thai-Wei* (Enclosure), *San-Thai* and *Wên-Chhang* before it entered *Pei-Tou* on a *chi-chhou* day in the eighth month [8th September]. It was of a white colour and measured over 100 ft (10 *chang*). On a *wu-hsü* day [17th September] it entered the *Tzu-Wei* (Enclosure) and went out of sight.” (CS 9/9a; CS 13/21a; SShu 25/6a; WHTK 286/17a; W135.)

The CS gives “*ting-ssu* day” [7th August] in its chronicle, but “*jen-shen* day” (22nd August) in its astronomical chapters. The latter date is followed by the WHTK and Williams.

The Korean says, “In autumn, during the seventh month of the sixth year of Chins Wang (of Paekche) a (*po*) comet appeared in *Pei-Ho*.” (*Chŭngbo Munhŏn Pigo* 6/20b.)

(179) *March*, 393. “During the second month of the 18th year of the Thai-Yuan reign-period [27th February to 28th March] a ‘guest star’ was seen within the *Wei* (sixth lunar mansion). It went out of sight during the ninth month [22nd October to 19th November].” (CS 12/21a; SShu 25/7a; WHTK 294/9b; B(1); W136; L; Hsi.)

This is regarded as the nova NGCII 4637; cf. Hsi Tsê-Tsung (1958).

(180) *March*, 395. *The Chronicle of Paekche* says, “In spring, during the second month of the fourth year of Asin Wang [8th March to 5th April] a (*po*) comet appeared at the NW for 20 days.” (*Samguk Sagi* 25/2.)

(181) *October*, 395. “During the ninth month of the 20th year of the Thai-Yuan reign-period [30th September to 29th October] a (*phêng-hsing*) comet, which resembled loose cotton moved

towards the SE and passed the *Nü* and the *Hsü* (10th and 11th lunar mansions) before it reached *Khu-Hsing*." (CS 13/21a; SShu 25/10b; TCKM 22/47b.)

TCKM says it was a (*chhang-hsing*) comet.

(182) *July–August*, 396. "In summer, during the sixth month of the first year of Thai-Tsu-Huang [22nd July to 19th August] a (*hui*) comet was seen at *Mao-Tou* (i.e., *Mao*, the 18th lunar mansion). At first, a large yellow star appeared at the *Mao* and the *Pi* (18th and 19th lunar mansions) for more than 50 days. In winter, during the 11th month [16th December, 396 to 14th January, 397] the yellow star reappeared." (WS 105/3/1a; Hsi.)

Hsi suggests that it could be a supernova.

(183) *19th March*, 400. "On a *chi-chhou* day in the second month of the fourth year of the Lung-An reign-period of An-Ti a (*po*) comet measuring 30 ft (3 *chang*) appeared at the *Khuei* (15th lunar mansion). Its upper portion reached *Ko-Tao* and the western wall of the *Tzu-Wei* (Enclosure). It entered the 'box' of *Pei-Tou* and went as far as *San-Thai*. During the third month [10th April to 9th May] it passed (*Wu*)-*Ti-Tso* and the *Tuan-Mên* ('Main-Gate') of the *Thai-Wei* (Enclosure)." (CS 13/21a; SShu 25/9b; WHTK 286/17b; W137.)

The WS also mentions the same comet but gives the third instead of the second month. (WS 105/3/2b.)

*The Chronicle of Paekche* says, "In spring, during the second month of the ninth year of Asin Wang [12th March to 9th April] a (*po*) comet was seen among the *Khuei* and the *Lou* (15th and 16th lunar mansions)." (*Samguk Sagi* 25/3.)

(184) *September*, 400. *The Chronicle of Silla* says, "In autumn, during the eighth month of the 45th year of Naemul Wang [5th September to 3rd October] a (*po*) comet was seen at the E." (*Samguk Sagi* 3/3.)

(185) *2nd January*, 401. "On a *wu-yin* day in the 12th month of the fourth year of the Lung-An reign-period a (*po*) comet appeared within *Kuan-So*, the *Thien-Shih* (Enclosure) and *Thien-Chin*." (CS 13/21b; SShu 25/10a; TCKM 23/19a; WHTK 286/17b; W138.)

(186) *November–December*, 402. "During the tenth month of the first year of the Yuan-Hsing reign-period [11th November to 10th December] a white 'guest star', which resembled loose cotton was seen at the west of the *Thai-Wei* (Enclosure). During the 12th month [9th January to 7th February, 402] it entered the *Thai-Wei* (Enclosure)." (CS 13/21b; SShu 25/12a; WHTK 294/9b; B(1); W139; Hsi.)

The WS just says, "In winter, during the tenth month of the fifth year of the Thien-Hsing reign-period a white 'guest star', which resembled loose cotton appeared at the west of the 'Southern Palace' (i.e., the *Thai-Wei* Enclosure)." (WS 105/3/4a.)

(187) *20th July*, 414. "On a *chi-ssu* day [probably '*i-ssu* day'] in the sixth month of the first year of the Shen-Jui reign-period a (*po*) comet appeared at the south of the *Mao* (18th lunar mansion)." (WS 105/3/10b.)

(188) *24th June*, 415. "On a *chia-shen* day in the fifth month of the 11th year of the I-Hsi reign-period a (*hui*) comet left the *Thien-Shih* (Enclosure) for the second time and swept *Ti-Tso*. It was then seen at the north of the *Fang* and the *Hsin* (fourth and fifth lunar mansions)." (CS 13/21b; SShu 25/23a; WHTK 286/18a; WHTK 286/19b; W140.)

The WS says, "On a *hsin-ssu* day in the fourth month of the second year of the Shen-Jui reign-period [21st June] a (*po*) comet appeared at the *Thien-Shih* (Enclosure). On a *chia-shen* day in the fifth month [24th June] a (*hui*) comet left the *Thien-Shih* (Enclosure), swept *Ti-Tso* and appeared at the north of the *Fang* and the *Hsin* (fourth and fifth lunar mansions)." (WS 105/3/11a.)

*The Chronicle of Paekche* also records the appearance of the same (*hui*) comet during the 11th year of Chōnji Wang and gives the date as 24th June. (*Samguk Sagi* 25/3.)

(189) *October–November*, 416. "During the ninth month of the third year of the Shen-Jui reign-period [7th October to 5th November] a long (*hui*) comet appeared at *Pei-Tou*, treading

the *Tzu-Wei* (Enclosure). On a *hsin-yu* day (in the tenth month) [22nd November] it entered the 'Southern Palace' (i.e., the *Thai-Wei* Enclosure). It was seen for more than 80 days." (WS 105/5/12a.)

(190) *December, 416–January, 417*. "During the 12th month of the third year of the Shen-Jui reign-period [24th December, 416 to 22nd January, 417] a (*hui*) comet appeared from *Thien-Chin* and entered the *Thai-Wei* (Enclosure). It then moved to *Pei-Tou*, passed the side of the *Tzu-Wei* (Enclosure) and trespassed against *Thien-Phou*. After more than 80 days it reached the Milky Way and went out of sight." (WS 105/3/12a.)

(191) *24th June, 418*. "On a *kéng-tzu* day in the fifth month of the 14th year of the I-Hsi reign-period a (*po*) comet appeared within the 'box' of *Pei-Tou*. On a *kuei-hai* day [15th September] in the seventh month it appeared as a (*hui*) comet at the west of the *Thai-Wei* (Enclosure) with its handle arising from beneath (*Hsi*-)*Shang-Hsiang* (Zosma) and its rays extending to a length of more than a hundred feet (10 *chang*) and sweeping across *Pei-Tou*, the *Tzu-Wei* (Enclosure) and the stars of *Chung-Thai*." (CS 13/21b; SShu 25/24a; TCKM 24/50a; WHTK 286/18a; W141.)

SShu gives "*jen-tzu* day" (6th July) instead of "*kéng-tzu* day". Williams omits the first date and gives 15th September.

(192) *17th February, 419*. "On a *wu-hsü* day in the first month of the first year of the Yuan-Hsi reign-period of Kung-Ti a (*po*) comet appeared at the western wall of the *Thai-Wei* (Enclosure)." (CS 13/22a; WHTK 286/18a; W142.)

Williams gives the date as 7th February.

*The Chronicle of Paekche* records the appearance of the same comet at the same date and position during the 15th year of Chǒnji Wang. (*Samguk Sagi* 25/4.)

(193) *May, 420*. "In summer, during the fourth month of the second year of the Yuan-Hsi reign-period [29th April to 27th May] a (*chhang-hsing*) comet extended across the heavens." (TCKM 24/56a.)

(194) *January–February, 421*. "During the 12th month of the fifth year of the Thai-Chhang reign-period [20th January to 17th February] a 'guest star' was seen at the *I* (27th lunar mansion)." (WS 105/3/13b; Hsi.)

(195) *26th March, 422*. "On a *hsin-mao* day in the second month of the third year of the Yung-Chhu reign-period a (*po*) comet appeared at the *Hsü* and the *Wei* (11th and 12th lunar mansions). It moved towards the Milky Way and *Thien-Chin* and swept *Ho-Ku* (Altair)." (SShu 26/2a; WS 105/3/14b; WHTK 286/18b; W143.)

WS gives "*hsin-ssu* day" [16th March]. WHTK gives "*ping-hsü* day" [21st March]. Williams follows WHTK.

(196) *18th December, 422*. "On a *wu-wu* day in the 11th month of the third year of the Yung-Chhu reign-period a (*po*) comet was seen within the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (13th and 14th lunar mansions)." (SShu 26/3b; WS 105/3/14b; WHTK 286/18b; W144.)

WS says that the comet also swept *Pei-Tou*. Williams gives the date as 17th December.

(197) *13th February, 423*. "On an *i-mao* day in the first month of the first year of the Ching-Phing reign-period of Shao-Ti a (*po*) comet appeared at the south of the *Tung-Pi* (14th lunar mansion). It was of a white colour and measured more than 20 ft (2 *chang*). It swept *Thien-Yuan* ['Celestial Pasture'] and went out of sight after 20 days." (SShu 26/3b; WS 105/3/14a; WHTK 286/18b; W145.)

WS gives a somewhat different version saying, "During the first month of the eighth year of the Thai-Chhang reign-period [28th January to 25th February] a (*hui*) comet appeared at the south of the *Khuei* (15th lunar mansion), measuring 30 ft (3 *chang*) and sweeping the Milky Way in the SE."

(198) 13th December, 473. "On a *wu-wu* day in the tenth month of the first year of the Ching-Phing reign-period a (*po*) comet appeared at the north of the *Ti* (third lunar mansion). Its tail measured 40 ft (4 *chang*) pointing NW at *Shê-Thi* and facing *Ta-Chio* (Arcturus). It moved eastwards and its length increased by 6 to 7 ft (*chhih*) every day. After more than ten days it went out of sight." (SShu 26/4a; WHTK 286/18b; W146.)

WHTK gives "*chi-wei* day" [14th December], but Williams gives 15th October. The commentary of the WS says, "During the 11th month of the eighth year of the Thai-Chhang reign-period [19th December, 423 to 16th January, 424] a (*hui*) comet was seen at *Thu-Ssu-Khung*." (WS 105/3/15a.)

(199) 21st June, 436. "On a *jen-shen* day in the fifth month of the second year of the Thai-Yen reign-period a (*po*) comet was seen at the *Fang* (fourth lunar mansion)." (WS 105/3/20a; Hsi.)

(200) 26th January, 437. "On a *jen-wu* day in the first month of the third year of the Thai-Yen reign-period a star appeared during the day at 15.00 to 17.00 hr in the NE by the side of the *Tung-Ching* (22nd lunar mansion). It was yellow in colour and was as large as an orange." (WS 105/3/20a; SShu 26/6a; Hsi.)

According to Hsi's *Catalogue of Novae* this star is regarded by Chang Yü-Chê as a comet and by SHKLOVSKY as a supernova.

(201) 10th November, 442. "On an *i-chhou* day in the ninth month of the third year of Thai-Phing-Chen-Chün a (*po*) comet appeared at *Thien-Lao* and entered *Wên-Chhang* and *Wu-Chhê*. It then passed between the *Mao* and the *Pi* (18th and 19th lunar mansions) and reached *Thien-Yuan* ('Celestial Pasture'). More than a hundred days later it disappeared in the W together with the asterisms." (WS 105/3/22a; SShu 26/7a; W147.)

The SShu says, "During the ninth month of the 19th year of the Yuan-Chia reign-period [20th October to 15th November] a 'guest star' appeared at *Pei-Tou*. Gradually it turned into a (*hui*) comet and went out of sight when it reached *Thien-Yuan* ('Celestial Pasture')." (SShu 26/7a; WHTK 286/18b; B(1).)

Williams gives the date as 1st November.

(202) June–July, 449. "During the fifth month of the tenth year of the Thai-Phing-Chen-Chün reign-period [7th June to 5th July] a (*hui*) comet appeared at the north of the *Mao* (18th lunar mansion)." (WS 105/3/23a.)

(203) November, 449. "During the tenth month of the 26th year of the Yuan-Chia reign-period [1st November to 30th November] a (*hui*) comet entered the *Thai-Wei* (Enclosure)." (SShu 26/8a; WS 105/3/23a; WHTK 286/18b; W148.)

The WS says that the comet was observed on a *hsin-ssu* day in the tenth month, but this does not agree with the sexagesimal cycle. The WHTK gives *kuei-mao* day.

Williams gives 11th November.

(204) June–July, 451. "During the fifth month of the 28th year of the Yuan-Chia reign-period [15th June to 14th July] a (*hui*) comet appeared at *Chüan-Shê*. It then entered the *Thai-Wei* (Enclosure), passed *Ti-Tso*, trespassed against *Shang-Hsiang*, swept *Phing(-Hsing)* and left by the *Tuan-Mên* ('Main-Gate'). It went out of sight at the *I* and the *Chen* (27th and 28th lunar mansions)." (SShu 26/8b; WS 105/3/23b; WHTK 286/18b; W149.)

The WHTK says that the comet appeared on an *i-mao* day in the fourth month of the 28th year of the Yuan-Chia reign-period [17th May] at the *Mao* (18th lunar mansion). Williams also gives this date.

This has been regarded by Crommelin as Halley's comet. Cf. PROCTOR and CROMMELIN (1937) p. 44 and CHU (1933).

(205) February–March, 453. "During the second month of the second year of the Hsing-An reign-period of Wên-Chhêng-Ti [24th February to 25th March] a (*po*) comet was seen in the W." (WS 105/3/24b.)

(206) 454. *The Chronicle of Paekche* says "During the 28th year of Piyu Wang a (*po*) comet measuring 20 ft (2 *chang*) was seen at the NW." (*Samguk Sagi* 25/5.)

(207) November, 460. "During the tenth month of the first year of the Ho-Phing reign-period [31st October to 28th November] a (*chhang-hsing*) comet appeared at *Thien-Tshang* measuring over 10 ft (1 *chang*)." (WS 105/3/27a.)

(208) 20th April, 461. "On a *hsin-ssu* day in the third month of the second year of the Ho-Phing reign-period a (*chhang-hsing*) comet appeared at *Thien-Chin*. It was red in colour and was as long as a piece of cloth." (WS 105/3/27b.)

(209) December, 464–January, 465. "During the 11th month of the fifth year of the Ho-Phing reign-period [15th December, 464 to 12th January, 465] a (*chhang-hsing*) comet was seen at *Chih-Nü* (Vega). It was pure white in colour." (WS 105/3/29a.)

(210) 6th February, 467. "On the 17th day in the first month of the first year of the Thai-Shih reign-period a white vapour (*chhi*) was seen stretching half across the heavens from the SW to the SE. This was called a *chhang-kêng*." (NCS 12/2a.)

The *chhang-kêng* is a type of comet and is shown as one with a nucleus and two tails in the drawings of the *Thien Wen Ta Chheng Kuan Khuei Chi Yao* (16/19b), compiled by Huang Ting in 1652 from the 14th century and even earlier materials. A description of this comet is also given in the Introduction (see p. 137 above). The text does not rule out the possibility that it might have been an auroral display.

(211) November–December, 483. "During the tenth month of the seventh year of the Thai Ho reign-period [16th November to 14th December] a 'guest star' of the size of a peck measure appeared at the *Shen* (21st lunar mansion). It looked like a (*po*) comet." (WS 105/3/37a.)

(212) December, 498. "During the 11th month of the 22nd year of the Thai-Ho reign-period [29th November to 28th December] a (*hui*) comet was seen at *Hsien-Yuan*. It passed the (*Yü-Kuei* (23rd lunar mansion) from the south and reached the Milky Way." (WS 105/4/5b.)

(213) 13th February, 501. "On an *i-ssu* day in the first month of the third year of Tung-Hun-Hou a (*chhang-hsing*) comet was seen stretching across the heavens." (NS 5/15b; W150.)

The WHTK says that on a *jen-hsü* day in the second month of that year [no such date] a (*Chhieh-Yu* banner) comet was seen. (WHTK 286/19a.)

(214) 14th April, 501. "On an *i-ssu* night in the third month of the first year of the Chung-Hsing reign-period a (*hui*) comet stretched across the heavens." (NS 5/24b; WHTK 286/19a; W151.)

This might be the same comet as that on 13th February in No. 213.

(215) 15th August, 507. "On a *chi-mao* day in the seventh month of the fourth year of the Chêng-Shih reign-period a (*po*) comet was seen in the NE." (WS 105/4/10a.)

(216) 7th October, 520. "On a *hsin-ssu* day in the ninth month of the first year of the Chêng-Kuang reign-period a (*hui*) comet as bright as a flame was seen in the E." (WS 105/4/19b; Sui 21/16b.)

The *Sui Shu* gives the date as 1st October.

(217) 29th August, 530. "On a *chia-wu* day in the seventh month of the third year of the Yung-An reign-period of Chuang-Ti a (*hui*) comet appeared in the morning in the NE at a distance of 10 ft (1 *chang*) to the east of *Chung-Thai*. It measured 6 ft (*chhih*) in length and was of a pure white colour. It was moving NE and pointing SW. On a *ting-yu* day [1st September] it was 1 ft to the NW of the upper star of *Hsia-Thai*. It went out of sight in the morning. On a *kêng-tzu* day [4th September] it was seen in the evening at the NW measuring 1 ft and pointing

SE. It gradually turned to the *Ti* (third lunar mansion). On a *chi-wei* day in the eighth month [23rd September] it was barely seen. On a *kuei-hai* day [27th September] it disappeared altogether." (WS 105/4/25b; TCKM 31/45b.)

Chu Wên-Hsin suggests that this was Halley's comet. Cf. CHU (1933).

(218) 1st March, 533. "On a *chi-yu* day in the first month of the fifth year of the Chung-Ta-Thung reign-period a (*chhang-hsing*) comet appeared." (*Liang Shu* 3/15b; Sui 21/17b; WHTK 296/19a; W152.)

Williams gives the date as 16th January, 532.

(219) 535. "During the second year of the Thien-Phing reign-period of Hsiao-Ching-Ti a (*po*) comet appeared at the *Thai-Wei* (Enclosure). It passed *Hsia-Thai* and the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (13th and 14th lunar mansions) before going out of sight." (WS 105/4/30a.)

(220) February, 537. "During the first month of the fourth year of the Yuan-Hsiang reign-period a 'guest star' was seen at the *Tzu-Wei* (Enclosure)." (WS 105/4/31a; Hsi.)

There is a textual corruption here because the Yuan-Hsiang reign-period lasted only one year. The sequence of the entry in the WS suggests that the reign-period should be Thien-Phing. The text would then read, "... first month of the fourth year of the Thien-Phing reign-period [27th January to 24th February, 537]. . ." Hsi (1958) gives "the first year of the Yuan-Hsiang reign-period", i.e. the year A.D. 538.

(221) 17th November, 539. "On a *hsin-chhou* day in the tenth month of the fifth year of the Ta-Thung reign-period a (*hui*) comet appeared from the *Nan-Tou* (eighth lunar mansion) measuring over 1 ft (*chhih*) and pointing SE. Its length gradually increased to over 10 ft (1 *chang*). On an *i-mao* day in the 11th month [1st December] it reached the *Lou* (16th lunar mansion) and went out of sight." (Sui 21/17b; WS 105/4/32b; WHTK 286/19a; W153.)

(222) February–March, 541. "During the first month of the seventh year of the Ta-Thung reign-period [11th February to 12th March] a 'guest star' appeared at the *Tzu-Wei* (Enclosure)." (*Hsi Wei Shu* 5/10b.)

(223) 9th October, 560. "On a *kuei-chhou* day in the ninth month of the first year of the Thien-Chia reign-period of Wên-Ti a (*hui*) comet measuring 4 ft (*chhih*) was seen pointing its rays towards the SW." (Sui 21/19a; *Chhen Shu* 3/10a; WHTK 286/19a; W154.)

The WHTK gives "the third year of the Thien-Chia reign-period" (A.D. 562).

(224) 26th September, 561. "On an *i-ssu* day in the ninth month of the first year of the Pao-Ting reign-period of Wu-Ti a 'guest star' appeared at the *I* (27th lunar mansion)." (*Chou Shu* 5/3b; Sui 21/26a; WHTK 294/10a; B(1); W164; L; Hsi.)

In Hsi's *Catalogue* it is said to be a nova near NGC 3242.

Biot gives "*ting-ssu* day", hence 8th October.

(225) 21st April, 565. "On a *wu-tzu* day in the third month of the fourth year of the Ho-Chhing reign-period of Wu-Chhêng-Ti a (*hui*) comet was seen." (Sui 21/24a; TCKM 34/78a; WHTK 286/19b; W160.)

(226) 22nd July, 565. "On a *kêng-shen* day in the sixth month of the fifth year of the Pao-Ting reign-period of Wu-Ti a (*hui*) comet appeared at *San-Thai*. It entered *Wên-Chhang* and trespassed against the *Tzu-Wei* (Enclosure). Later it passed the western wall of the *Tzu-Wei* (Enclosure) and entered the *Wei* (12th lunar mansion). Its length gradually increased to over 10 ft (1 *chang*). It was pointing towards the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (13th and 14th lunar mansions). After more than a hundred days its length diminished to 2.5 ft (2 *chhih* 5 *tshun*). It went out of sight at the *Hsü* and the *Wei* (11th and 12th lunar mansions)." (*Chou Shu* 5/10a or Sui 21/27a; Sui 21/20b; Sui 21/24a; *Pei Shih* 10/4b; *Pei Shih* 8/6a; WHTK 286/20a; W165; W155; W161.)

*Chou Shu* gives 22nd July, *Sui Shu* gives 23rd July and *Pei Chhi Shu* gives 24th July, corresponding to W165, W155 and W161 respectively.

(227) 20th July, 568. "On a *chia-hsü* day in the sixth month of the third year of the Thien-Ho reign-period a (*po*) comet appeared at the *Tung-Ching* (22nd lunar mansion) moving northward. After one month it reached the *Yü-Kuei* (23rd lunar mansion) and went out of sight." (*Chou Shu* 5/14a; *Pei Shih* 10/6b; *Sui* 21/24b; *Sui* 21/28a; *Chhen Shu* 4/5a; WHTK 286/19b; WHTK 286/20a; W166; W162; W156.)

Williams overlooks the leap year and gives 21st July in W166. The *Sui Shu* gives three separate entries of this comet. This is copied in the WHTK and in turn by Williams. Hence W166, W162 and W156 would refer to one and the same comet.

The *Sui Shu* (21/28a) says that it was a (*hui*) comet measuring over 10 ft, white at the top and red at the base, appearing at the *Tung-Ching* (22nd lunar mansion) and going out of sight at about 8 in. (*tshun*) from the north of the *Yü-Kuei* (23rd lunar mansion) on a *kuei-mao* day (18th August). This is accounted for by W162, which does not give the day, but only the month.

The *Chhen Shu* says, "On a *ting-mao* day in the sixth month of the second year of the Kuang-Ta reign-period [13th July] a (*hui*) comet was seen." This same passage is copied by the WHTK, but the date is changed to "*ting-hai* day" (2nd August). In W156 Williams quotes the WHTK, but gives 3rd August for the date, overlooking the leap year.

(228) 28th July, 568. "On a *jen-tzu* day in the sixth month of the second year of the Kuang-Ta reign-period a 'guest star' was seen at the east of the *Ti* (third lunar mansion)." (*Sui* 21/21b; WHTK 294/10a; B(1); L; Hsi.)

There was no "*jen-tzu* day" in that month. It should probably read "*jen-wu* day", which gives the date 28th July. Biot and Lundmark give the date incorrectly as June, 568.

Biot, Lundmark and Hsi all regard it as nova, but the *Sui Shu* continues in another page saying, "On a *chi-wei* day in the seventh month of the third year of the Thien-Ho reign-period [3rd September, 568] a 'guest star' was seen at the *Fang* and the *Hsin* (fourth and fifth lunar mansions). It was white, resembling loose cotton and was of the size of a peck measure. It gradually increased in size and moved eastward. During the eighth month [7th September to 6th October] it entered the *Thien-Shih* (Enclosure) and looked like a piece of cloth. It again moved eastward and trespassed against *Ho-Ku* and *Yu-Chiang*. On a *kuei-wei* day [27th September] it trespassed against *Hu-Kua* and entered the (*Ying*-)*Shih* (13th lunar mansion), trespassing against *Li-Kung*. On a *jen-yin* day in the ninth month [16th October] it entered the *Khuei* (15th lunar mansion) and became smaller. On a *jen-hsü* day [5th November] it was about one foot (*chhih*) north of the *Lou* (16th lunar mansion). It lasted altogether 69 days." (*Sui* 21/28a; *Chou Shu* 5/14a; WHTK 294/10a; WHTK 268/20a; B(1); W163.)

The *Chou Shu* says that it disappeared after over 40 days. It appears that all these different accounts are dealing with one single comet.

(229) 4th April, 574. "On a *wu-wu* day in the second month of the third year of the Chien-Tê reign-period a 'guest star' as large as a peach and with a bluish-white colour appeared at the south-east of *Wu-Chhê* at a distance of about 3 ft (*chhih*) away. It gradually moved eastward, while its length increased to 2 ft. On a *jen-chhen* day in the fourth month [8th May] it entered *Wên-Chhang*. On a *ting-wei* day [23rd May] it entered the 'box' of *Pei-Tou*. It later left the 'box' of *Pei-Tou* and became smaller. After a total of 93 days it went out of sight." (*Sui* 21/29b; WHTK 294/10a; B(1); W167.)

(230) 31st May, 574. "On an *i-mao* day in the fourth month of the third year of the Chien-Tê reign-period a (*po*) comet was seen outside the walls of the *Tzu-Wei* (Enclosure). It was of the size of a fist and was reddish-white in colour. It pointed towards *Wu-Ti-Tso* and gradually moved SE, while its length increased to 15 ft. On a *chia-tzu* day in the fifth month [9th June] it reached the north of *Shang-Thai*, from where it went out of sight." (*Sui* 21/30b; *Chou Shu* 5/24a; WHTK 286/20b; W168.)

The *Chou Shu* says that the comet was seen on a *ting-ssu* day (2nd June).

The *Chhen Shu* says, "On a *kêng-tzu* day in the fourth month of the sixth year of the Thai-Chien reign-period [16th May, 574] a (*hui*) comet was observed." (*Chhen Shu* 5/15b.)

(231) 27th April, 575. "On a *ping-hsü* day in the fourth month of the seventh year of the



Thai-Chien reign-period of Hsüan-Ti a (*po*) comet appeared at *Ta-Chio* (Arcturus)." (Sui 21/21b; *Chhen Shu* 5/17a; WHTK 286/19b; W157; Hsi.)

Hsi suggests that this was a recurrence of the nova of 204 B.C.

(232) *November, 579. The Chronicle of Paekche* says, "In winter, during the tenth month of the 26th year of Widök Wang [5th November to 3rd December] a (*chhang-hsing*) comet stretched across the heavens. It went out of sight after 20 days." (*Samguk Sagi* 27/2.)

(233) *15th January, 582. "On a hsin-ssu day in the 12th month of the 13th year of the Thai-Chien reign-period a (hui) comet was seen."* (*Chhen Shu* 5/29b; Sui 21/22a; WHTK 286/19b; W158.)

The *Sui Shu* says that the comet was seen on a *hsin-ssu* day (20th January) in the SW. This is also quoted by WHTK. Williams gives the date as 26th January, 416.

(234) *20th February, 583. "On a jen-hsü day in the first month of the first year of the Chih-Tê reign-period a (phêng-hsing) comet was seen."* (Sui 21/22a.)

(235) *22nd November, 588. "On a chia-tzu day in the tenth month of the eighth year of the Khai-Huang reign-period of Sui Wên-Ti a (po) comet appeared at the Chhien-Niu (ninth lunar mansion)." (Sui 21/35a; WHTK 286/20b; W169; Hsi.)*

(236) *9th January, 595. "On a kuei-wei day in the 11th month of the 14th year of the Khai-Huang reign-period of Wên-Ti a (hui) comet appeared at the Hsü and the Wei (11th and 12th lunar mansions). It reached the Khuei and the Lou (15th and 16th lunar mansions)." (Sui 21/35b; WHTK 286/20b; W170.)*

*The Chronicle of Paekche* says, "On a *kuei-wei* day in the 11th month of the 41st year of Widök Wang [9th January, 595] a (*hui*) comet was seen at the *Chio* and the *Khang* (first and second lunar mansions)." (*Samguk Sagi* 27/2.)

(237) *4th April, 607. "On a hsin-hai day in the third month of the third year of the Ta-Yeh reign-period a (chhang-hsing) comet appeared in the W extending across the heavens and passed the Khuei, the Lou, the Chio and the Khang (15th, 16th, first and second lunar mansions). It went out of sight, but reappeared on a hsin-wei day in the ninth month [21st October] at the south. It also extended across the heavens from the Chio and the Khang (first and second lunar mansions), but swept Ti-Tso within the Thai-Wei (Enclosure) and trespassed against all the other lunar mansions with the exception of the Shen (21st lunar mansion). It appeared throughout the rest of the year before going out of sight."* (Sui 21/36a; WHTK 286/21a; W172.)

The *Pei Shih* gives a somewhat different account saying, "on a *ping-tzu* day in the first month of the third year of the Ta-Yeh reign-period [28th February] a (*chhang-hsing*) comet which extended across the heavens was seen at the *Tung-Pi* (14th lunar mansion) before going out of sight after 20 days." (PS 12/7b). It then continues, "On a *chi-chhou* day in the second month [13th March] a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) and *Wên-Chhang*. It passed *Ta-Ling*, *Wu-Chhê* and *Pei-Ho* before entering the *Thai-Wei* (Enclosure) and swept both the forward and rear (stars) of *Ti-Tso*. It ceased to be visible after more than a hundred days." (PS 12/8a; WHTK 286/21a; W171.)

There is a misprint in the WHTK giving "*i-chhou*" instead of "*chi-chhou*" for the cyclical day.

CHU WÊN-HSIN (1933) suggests that this was Halley's comet.

(238) *25th June, 607. "On a kuei-yu day in the fifth month of the third year of the Ta-Yeh reign-period a (po) comet was seen at Wên-Chhang and Shang-Chiang."* (PS 12/9b.)

(239) *22nd October, 608. "On a wu-yin day in the ninth month of the fourth year of the Ta-Yeh reign-period a (hui) comet appeared at Wu-Chhê and swept Wên-Chhang. It went out of sight when it reached the Fang (fourth lunar mansion)." (PS 21/12a; WHTK 286/21a; W172.)*

WHTK gives only "the fourth year of the Ta-Yeh reign-period" (608), which is referred to in the last sentence of Williams' account of W172, the comet of 4th April, 607.

(240) *July*, 615. "During the sixth month of the 11th year of the Ta-Yeh reign-period [2nd July to 30th July] a (*po*) comet appeared at the SE of *Wên-Chhang*. It measured 5 to 6 in. (*tshun*), looked black and pointed and it scintillated as it moved towards the NW for several days until it reached *Wên-Chhang*. It came within 4 to 5 in. (*tshun*) within the *Tzu-Wei* Enclosure, but did not enter it. It then moved away and went out of sight." (Sui 21/26b; WHTK 286/21b; W173.)

(241) *July*, 617. "During the sixth month of the 13th year of the Ta-Yeh reign-period [9th July to 6th August] a (*po*) comet appeared at *Wu-Ti-Tso* of the *Thai-Wei* (Enclosure). It was of a reddish-yellow colour and measured 3 to 4 in. (*tshun*). After a few days it went out of sight." (Sui 21/37b; WHTK 286/21b; W174.)

Williams gives July, 616.

(242) *October*, 617. "During the ninth month of the 13th year of the Ta-Yeh reign-period [6th October to 3rd November] a (*hui*) comet was seen at the *Ying-Shih* (13th lunar mansion)." (PS 12/29a; WHTK 286/21b; W175.)

Williams gives October, 616.

(243) *26th March*, 626. "On the night of the 23rd day in the second month of the ninth year of the Wu-Tê reign-period a (*po*) comet appeared between the *Wei* and the *Mao* [17th and 18th lunar mansion]. On the 28th day [31st March] the comet was seen at *Chüan-Shê*." (CTS 36/5b; HTS 32/5b; THY 43/1a; HWTk 286/21b; W176.)

(244) *20th September*, 634. "On the 23rd day in the eighth month of the eighth year of the Chen-Kuan reign-period a (*po*) comet appeared at the *Hsü* and the *Wei* (11th and 12th lunar mansions) for 11 days before going out of sight [30th September]." (CTS 36/5b; HTS 32/5b; THY 43/1a; WHTK 286/21b; W177.)

Williams follows the HTS which says that the comet appeared on a chia-tzu day (22nd September).

The Japanese records, "During the eighth month of the sixth year of Jomei-tennō [29th August to 27th September approx.] a (*chhang-hsing*) comet was seen at the south. During the first month of the seventh year [24th January to 22nd February, 635 approx.] the (*hui*) comet turned round and appeared at the E." (*Dainihonshi* ch. 359; *Nihongi* tr. Aston vol. II pp. 166 and 167; K.)

(245) *30th April*, 639. "On the night of the 22nd day in the third month of the 13th year of the Chen-Kuan reign-period a (*po*) comet appeared at the *Pi* and the *Mao* (19th and 18th lunar mansions)." (CTS 36/6a; HTS 32/5b; THY 43/2a; WHTK 286/21b; W178; Hsi.)

The Japanese records, "On the 25th day in the first month of the 11th year of Jomei-tennō [5th March, 639] a (*chhang-hsing*) comet was seen." (*Dainihonshi* ch. 359; K.)

Aston gives the year as A.D. 638 (*Nihongi* tr. Aston vol. II p. 169).

*The Chronicle of Paekche* says, "During the first month of the 41st year of Mu Wang [29th January to 26th February] a (*po*) comet was seen at the NW." (*Samguk Sagi* 27/6.)

(246) *1st August*, 641. "On the 19th day in the sixth month of the 15th year of the Chen-Kuan reign-period a (*po*) comet was seen at the *Thai-Wei* (Enclosure) trespassing against *Lang-Wei*. It disappeared on a *chia-hsü* day in the seventh month [26th August]." (CTS 36/6a; HTS 32/5b; THY 43/2a; TCKM 40/4a; WHTK 286/21b; W179). TCKM gives "the fifth month".

(247) *9th August*, 642. The Japanese records, "On a *jen-hsü* day in the seventh month of the first year of Kōgyoku-tennō a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(248) *September*, 647. *The Chronicle of Silla* says, "During the eighth month of the first year of Chindōk Yōwang [5th September to 3rd October] a (*hui*) comet appeared at the S; many stars drifted N." (*Samguk Sagi* 5/5.)

(249) 662. The Korean records, "In spring during the second year of Munmu Wang a 'guest star' was seen at the S." (*Chūngbo Munhōn Pigo* ch. 6.)

(250) 29th September, 663. "On a *kuei-mao* day in the eighth month of the third year of the Lung-Shuo reign-period a (*hui*) comet appeared at *Tso-Shê-Thi*, measuring over 2 ft (*chhih*). On an *i-ssu* day [1st October] it went out of sight." (HTS 32/6a; WHTK 286/22a; W180.)

(251) 24th May, 667. "On a *ping-chhen* day in the fourth month of the second year of the Chhien-Fêng reign-period a (*hui*) comet appeared at the NE among *Wu-Chhê* and the *Pi* and the *Mao* (19th and 18th lunar mansions). It was not visible on an *i-hai* day [12th June]." (HTS 32/6a; WHTK 286/22a; W181; Hsi.)

(252) May-June, 668. "During the fourth month of the first year of the Tsung-Chang reign-period [17th May to 14th June] a (*hui*) comet appeared above *Wu-Chhê*. It went out of sight on the 22nd day [of the month] [7th June]." (CTS 36/6a; THY 43/2a; TCKM 41/21a; Hsi.)

*The Chronicle of Silla* says, "During the fourth month of the eighth year of Munmu Wang a (*hui*) comet guarded (*shou*) *Thien-Chhuan*." (*Samguk Sagi* 6/6.)

(253) October, 672. *The Chronicle of Silla* says, "During the ninth month of the 12th year of Munmu Wang [27th September to 25th October] a (*hui*) comet was seen on seven occasions in the north." (*Samguk Sagi* 7/8.)

(254) November, 675. "During the tenth month of the second year of the Shang-Yuan reign-period [24th October to 22nd November] a (*hui*) comet appeared at the south of the *Chio* and the *Khang* (first and second lunar mansions) measuring 5 ft (*chhih*) in length." (CTS 36/6a; HTS 32/6a; THY 43/2b; WHTK 286/22a; W182.)

HTS, WHTK and Williams say that the comet appeared on a *jen-wu* day in the twelfth month (3rd January, 676).

(255) 4th September, 676. "On the 21st day in the seventh month of the third year of the Shang-Yuan reign-period a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) pointing towards *Nan-Ho* and *Chi-Hsin*. It measured over 3 ft (*chhih*) and gradually pointed towards the NE. Then the rays increased to a length of 30 ft (3 *chang*), sweeping *Chung-Thai* and pointing towards *Wên-Chhang*. After 58 days it went out of sight." (CTS 36/6a; HTS 32/6a; THY 43/2b; WHTK 286/22a; W183.)

Williams overlooks the intercalary third month in the Chinese calendar and gives the date as 7th July.

*The Chronicle of Silla* says, "During the seventh month of the 16th year of Munmu Wang [15th August to 12th September] a (*hui*) comet appeared between *Pei-Ho* and *Chi-Shui*, measuring 6 to 7 paces." (*Samguk Sagi* 7/10.)

The Japanese records, "During the seventh month of the fourth year of Temmu-tennō a comet measuring 7 to 8 ft appeared in the E. At the ninth month [13th September to 10th October approx.] it stretched across the heavens." (*Dainihonshi* ch. 359; K; *Nihongi* tr. Aston vol. II p. 333.)

(256) 17th October, 681. "On the night of the first day in the ninth month of the second year of the Yung-Lung reign-period a (*hui*) comet appeared in the W within the *Thien-Shih* (Enclosure) measuring 5 ft (*chhih*). As it moved eastward it became smaller. Leaving the *Thien-Shih* (Enclosure) it reached *Ho-Ku* and *Tso-Chhi* and went out of sight on the 17th day [2nd November]." (CTS 36/6a; HTS 32/6a; THY 43/2b; WHTK 286/22a; W184.)

The WHTK gives the first year of the Khai-Yao reign-period.

The Japanese records, "On the 16th day in the ninth month of the ninth year of Temmu-tennō [2nd November, 681] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K; *Nihongi* tr. Aston vol. II p. 353.)

(257) 20th April, 683. "On the 18th day in the third month of the second year of the Yung-Chhun reign-period a (*hui*) comet appeared north of *Wu-Chhê*. After 25 days it went out of sight." (CTS 36/6b; HTS 32/6a; THY 43/3a; WHTK 286/22b; W185; Hsi.)

Hsi regards it as a nova but gives the wrong year.

*The Chronicle of Silla* says, "During the tenth month of the third year of Sinmun Wang [25th October to 23rd November] a (*hui*) comet was seen at *Wu-Chhê*." (*Samguk Sagi* 8/2.)

(258) 6th September, 684. "On the 22nd day in the seventh month of the first year of the Wên-Ming reign-period a (*hui*) comet measuring over 10 ft (1 *chang*) appeared in the W. After 49 days it went out of sight [i.e., 24th October]." The CTS then continues, "On the 29th day in the ninth month of the first year of the Kuang-Chê reign-period [11th November] a star like a half-moon was seen at the west." (CTS 36/6b; HTS 32/6a; THY 43/3a; WHTK 286/22b; W186; W187; L.)

The HTS and the WHTK put these two records in reverse order. Williams overlooks the intercalary fifth month of that year in the Chinese calendar and gives the date as 8th July to 10th August.

CHU WÊN-HSIN suggests that this was Halley's comet. Cf. PROCTOR and CROMMELIN (1937) p. 44.

The Japanese records, "On the 23rd day in the seventh month of the 12th year of Temmu-tennō [31st August, 684] a (*hui*) comet measuring over 10 ft (1 *chang*) was observed. During the 11th month [12th December, 684 to 10th January, 685] a (*po*) comet appeared at the central heavens and moved along with the *Mao* (18th lunar mansion) until the end of the month, when it went out of sight." (*Dainihonshi* ch. 359; K; *Nihongi* tr. Aston vol. II p. 364 and p. 367.)

(259) March, 699. *The Chronicle of Silla* says, "During the second month of the eighth year of Hyoso Wang [7th March to 5th April] a white vapour extended the heavens and a (*po*) comet was seen in the E." (*Samguk Sagi* 8/5.)

(260) March–April, 701. *The Chronicle of Silla* says, "During the second month of the tenth year of Hyoso Wang [14th March to 12th April] a (*hui*) comet entered the moon." (*Samguk Sagi* 8/5.)

(261) 16th November, 707. "On the 18th day in the tenth month of the first year of the Ching-Lung reign-period a (*hui*) comet appeared in the W for 43 days before going out of sight." (CTS 36/6b; HTS 32/6a; THY 43/3a; WHTK 286/22b; W188; Hsi.)

(262) 28th July, 708. "On the seventh day on the seventh month of the second year of the Ching-Lung reign-period a (*po*) comet appeared between the *Wei* and the *Mao* [17th and 18th lunar mansions]." (CTS 36/6b; HTS 32/6a; THY 43/3a; WHTK 286/22b; W189.)

The HTS and the WHTK both give the wrong month, which is followed by Williams.

(263) 16th September, 709. "On the eighth day in the eighth month of the third year of the Ching-Lung reign-period a (*po*) comet appeared within the *Tzu-Wei* Enclosure." (CTS 36/6b; HTS 32/6a; THY 43/3a; WHTK 286/22b; W190.)

The HTS and the WHTK give the year wrongly as the "second year". This error is also copied by Williams.

(264) July–August, 712. "During the sixth month of the first year of the Yen-Ho reign-period [9th July to 6th August] a (*hui*) comet moved from *Hsien-Yuan* to enter the *Thai-Wei* (Enclosure). After reaching *Ta-Chio* (Arcturus) it went out of sight." (HTS 32/6a; WHTK 286/22b; W191.)

The CTS says, "On the fourth day in the seventh month of the first year of the Thai-Chi reign-period [10th August, 712] a (*hui*) comet entered the *Thai-Wei* Enclosure." (CTS 36/6b; THY 43/3a.)

Williams is not definite about the year.

(265) 8th December, 718. The Japanese records, "On the 12th day in the 11th month of the second year of the Yōrō reign-period a (*hui*) comet was observed." (*Dainihonshi* ch. 359; K.)

(266) 19th August, 722. The Japanese records, "On the third day in the seventh month of the sixth year of the Yōrō reign-period a 'guest star' appeared by the side of *Ko-Tao* for a period of five days before going out of sight." (*Dainihonshi* ch. 359; K; Hsi.)

(267) 11th February, 725. The Japanese records, "On the 24th day in the first month of the second year of the Shinki reign-period a (*po*) comet was seen." (*Dainihonshi* ch. 359; K; Hsi.)

(268) 30th June, 730. "On the 11th day in the sixth month of the 18th year of the Khai-Yuan reign-period a (*hui*) comet appeared at *Wu-Chhê*. On the 13th day [19th July] the (*po*) comet was seen between the *Pi* and the *Mao* [19th and 18th lunar mansions]." (CTS 36/6b; HTS 32/6a; THY 43/3b; WHTK 286/22b; W192.)

The HTS gives the second date as 9th July instead of 19th July.

(269) 1st April, 738. "On the eighth day in the third month of the 26th year of the Khai-Yuan reign-period a (*po*) comet appeared at the *Tzu-Wei* Enclosure. It passed the 'box' of (*Pei*-)*Tou* and after over ten days it lost sight due to dark clouds." (CTS 36/6b; HTS 32/6b; THY 43/3b; WHTK 286/23a; W193.)

Williams gives the year as 739.

(270) Winter, 744. *The Chronicle of Silla* says, "In winter, in the third year of Kyōngdōk Wang an "ominous star" as large as a five-peck measure appeared in the central heavens. It went out of sight after ten days." (*Samguk Sagi* 9/3.)

(271) 8th January, 745. The Japanese records, "On the second day in the 12th month of the 16th year of the Tempyō reign-period a (*po*) comet was seen." (*Dainihonshi* ch. 359; K; Hsi.)

(272) April, 759. *The Chronicle of Silla* says, "During the third month of the 18th year of Kyōngdōk Wang [4th April to 1st May] a (*hui*) comet appeared. It went out of sight in the autumn." (*Samguk Sagi* 9/5.)

(273) 16th May, 760. "On a *ting-ssu* night in the fourth month of the third year of the Chhien-Yuan reign-period a (*hui*) comet appeared at the fifth watch (03·00 to 05·00 hr) in the E. It was white in colour and measured 4 ft (*chhih*). Starting between the *Lou* and the *Wei* (16th and 17th lunar mansions) it moved rapidly towards the NE corner passing the *Mao*, the *Pi*, the *Tsui*, the *Shen*, the (*Tung*-)*Ching*, the *Yü-Kuei* and the *Liu* (18th to the 24th lunar mansions) and *Hsien-Yuan* before it reached a position about 7 in. (*tshun*) away from *Yu-Chih-Fa* of the *Thai-Wei* (Enclosure). After more than 50 days it went out of sight." (CTS 36/8a; HTS 32/6b; THY 43/3b; WHTK 286/23a; W194.)

Crommelin regards it as Halley's comet; cf. CHU WĒN-HSIN (1933).

(274) 20th May, 760. "On a *hsin-yu* day, the first day in the intercalary fourth month of the third year of the Chhien-Yuan reign-period an 'ominous star' measuring several tens of feet (several *chang*) was seen in the S." (CTS 36/8a; HTS 32/6b; THY 43/4a; WHTK 286/23a; W195.)

The HTS and the WHTK say that it was a (*hui*) comet, which was seen in the W and went out of sight in the fifth month. The THY say that the comet first appeared on 9th June.

(275) May-June, 761. *The Chronicle of Silla* says, "In summer, during the fourth month of the 20th year of Kyōngdōk Wang [9th May to 7th June] a (*hui*) comet was observed." (*Samguk Sagi* 9/5.)

(276) April-May, 764. *The Chronicle of Silla* says, "In the third month of the 23rd year of Kyōngdōk Wang [6th April to 5th May] a (*po*) comet appeared in the SE." (*Samguk Sagi* 9/6.)

(277) 21st January, 767. "On the 17th day in the 12th month of the first year of the Ta-Li reign-period a (*hui*) comet appeared at *Hu-Kua*, with its rays gradually invading *Huan-Chê*. It measured more than 1 ft (*chhih*). After 20 days it went out of sight." (THY 43/4a; CTS 36/8b; HTS 32/6b; WHTK 286/23a; W196.)

The HTS gives "*chi-hai* day" (22nd January), but Williams gives 12th January.

(278) Spring, 768. *The Chronicle of Silla* says, "In the spring of the fourth year of Hyegong Wang a (*hui*) comet was seen in the NE." (*Samguk Sagi* 9/6.)

(279) 26th May, 770. "On a *chi-wei* night in the fourth month of the fifth year of the Ta-Li reign-period a (*hui*) comet was seen in the N. It was coloured white. On a *kuei-wei* night [19th June] the (*hui*) comet followed the heavens and moved eastwards approaching *Pa-Ku*. On a *kuei-mao* day [9th July] it was 2 ft (*chhih*) away from *San-Kung*. On a *chi-wei* day [25th July] it went out of sight." (CTS 36/9b; HTS 32/6b; THY 43/4a; WHTK 286/23a; W197.)

The THY says that the comet appeared at *Wu-Chhê* on the 27th day of the fourth month (26th May) measuring 50 ft (5 *chang*) and that it went out of sight on the 28th day in the following month (25th July).

Williams gives 15th June.

*The Chronicle of Silla* says, "On the 11th day in the fifth month of the sixth year of Hyegong Wang [9th June] a (*hui*) comet appeared at the north of *Wu-Chhê*." (*Samguk Sagi* 9/7.)

The Japanese records that a (*hui*) comet was seen during the sixth and the seventh months of the first year of the Hōki reign-period (28th June to 25th August, approx.). (*Dainihonshi* ch. 359; K.)

(280) 15th January, 773. "On a *chia-tzu* day in the 12th month of the seventh year of the Ta-Li reign-period a (*chhang-hsing*) comet appeared at the *Shen* (21st lunar mansion)." (CTS 36/10a; HTS 32/6b; THY 43/4a; WHTK 286/23b; W197\*.)

The HTS says that the comet was seen on a *ping-yin* night (17th January).

The Japanese records the appearance of a (*hui*) comet on the 23rd day in the 12th month of the third year of the Hōki reign-period (20th January). (*Dainihonshi* ch. 359; K.)

(281) 17th April, 814. "On the night of the 23rd day in the third month of the ninth year of the Yuan-Ho reign-period a (*hui*) comet was seen in the E." (*Nittō Guhō Junrei Gyōki* vol. I, p. 52; Edwin O. Reischauer, *Ennin's Diary* p. 312.)

(282) April-May, 815. "During the third month of the tenth year of the Yuan-Ho reign-period a (*chhang-hsing*) comet was seen at the *Thai-Wei* (Enclosure) with its tail extending as far as *Hsien-Yuan*." (HTS 32/6b; WHTK 286/23b; W198.)

*The Chronicle of Silla* says, "On the first day in the eighth month of the seventh year of Hōndōk Wang [7th September, 815] a large star appeared between the *I* and the *Chen* [27th and 28th lunar mansions] pointing W and measuring about 6 ft (*chhih*) in length and 2 in. (*tshun*) in width." (*Samguk Sagi* 10/7.)

(283) 17th February, 817. "On a *wu-tzu* day in the first month of the 12th year of the Yuan-Ho reign-period a (*hui*) comet appeared at the south of the *Pi* (19th lunar mansion) measuring more than 2 ft (*chhih*) and pointing SW. After three days it came near *Shen-Chhi* and went out of sight." (CTS 36/11b; HTS 32/6b; THY 43/4a; WHTK 286/23b; W199.)

(284) 27th February, 821. "On a *chi-wei* night in the first month of the first year of the Chhang-Chhing reign-period a (*po*) comet appeared at the *I* (27th lunar mansion). On a *ting-mao* night (7th March) the (*po*) comet was above [the planet] Mercury at a distance of about 7 in. (*tshun*) from the first star in the south of the western wall of the *Thai-Wei* (Enclosure)." (CTS 36/11b; HTS 32/6b; THY 43/4b; WHTK 286/23b; W200 and W201.)

The THY says that the comet was seen in the SE.

(285) June-July, 822. "During the sixth month of the first year of the Chhang-Chhing reign-period [23rd June to 21st July] a (*hui*) comet appeared at the *Mao* (18th lunar mansion) measuring 10 ft (1 *chang*). It disappeared after 10 days." (HTS 32/6b; WHTK 286/23b.)

(286) 19th February, 823. The Japanese records, "On the fifth day in the first month of the 14th year of the Kōnin reign-period a (*po*) comet appeared in the SW for three days." (*Dainihonshi* ch. 359; K; Hsi.)

(287) 3rd September, 828. "On a *chia-chhen* day in the seventh month of the second year of the Thai-Ho reign-period a (*hui*) comet appeared at the south of *Yu-Shê-Thi* measuring 2 ft (*chhih*)." (HTS 32/6b; THY 43/4b; WHTK 286/23b; W202.)

Williams gives 5th July by ignoring the intercalary third month.

(288) *November, 829*. "During the tenth month of the third year of the Thai-Ho reign-period [1st November to 29th November] a 'guest star' appeared at *Shui-Wei*." (HTS 32/6b; WHTK 294/10b; B(1); W203; L; Hsi.)

(289) *9th October, 834*. "On a *hsin-hai* night in the ninth month of the eighth year of the Thai-Ho reign-period at the fifth watch (03-00 to 05-00 hr) a (*hui*) comet appeared at the *Thai-Wei* (Enclosure) near *Lang-Wei*. It measured over 10 ft (1 *chang*), pointed towards the W and moved in a NW direction. After nine days it passed *Lang-Wei* and went out of sight at a distance of 5 ft (*chhih*) to the NW of it." (CTS 36/13b; HTS 32/7a; THY 43/4b; WHTK 286/23b; W204.)

The CTS then continues, "On a *kuei-yu* night in the ninth month of the eighth year of the Thai-Ho reign-period [31st October, 834] a (*hui*) comet again appeared at the E. Its rays measured 3 ft (*chhih*) and were very intense." (CTS 36/13b; THY 43/4b.)

The THY gives "*kêng-shen* day" (18th October).

(290) *July-August, 836*. *The Chronicle of Silla* says, "In summer, during the sixth month of the 11th year of Hôngdôk Wang [17th July to 15th August] a (*po*) comet was seen in the E." (*Samguk Sagi* 10/11.)

(291) *22nd March, 837*. "On a *ping-wu* day in the second month of the second year of the Khai-Chhêng reign-period a (*hui*) comet appeared at the first degree of the *Wei* (12th lunar mansion). It measured over 7 ft (*chhih*) and was pointing westwards at the *Nan-Tou* (8th lunar mansion). On a *wu-shen* day [24th March] it appeared at the SW of the *Wei* (12th lunar mansion) and its rays had increased both in length and in intensity and also pointing westward. On a *kuei-chhou* night [29th March] the comet was at the 8th degree of the *Wei* (12th lunar mansion). On a *kêng-shen* night [5th April] it was found  $3\frac{1}{2}$  degrees (*tu*) from the *Hsü* (11th lunar mansion). On a *hsin-yu* day [6th April] its length exceeded 10 ft (1 *chang*) and it was seen moving westward at  $1\frac{1}{2}$  degrees from the *Hsü* (11th lunar mansion) and (with its tail) gradually pointing towards the south. On a *jen-hsü* day [7th April] its length was over 20 ft (2 *chang*) and its width was more than 3 ft (*chhih*). It was found at 9 degrees (*tu*) from the *Nü* (tenth lunar mansion). On a *kuei-hai* night [8th April] it increased both in length and in width at the 4th degree of the *Nü* (tenth lunar mansion). On a *chia-tzu* night [9th April], the first day of the third month it was seen at 10 degrees from the *Nan-Tou* (tenth lunar mansion), with its length measuring 50 ft (5 *chang*). Its tail then branched off into two, one pointing towards the *Ti* (third lunar mansion) and the other enveloping the *Fang* (fourth lunar mansion). On a *ping-yin* night [11th April] it measured 60 ft (6 *chang*), but was no longer branched and pointed towards the N. It was found at the seventh degree of the *Wei* (sixth lunar mansion) [should read *Khang*, the second lunar mansion]. On a *wu-chhen* night [13th April] the comet measured 80 ft (8 *chang*) and was moving towards the NW and pointing E at the 14th degree of the *Chang* (26th lunar mansion). On a *kuei-wei* night [28th April] the comet measured 3 ft (*chhih*) and appeared at the right of *Hsien-Yuan*, pointing eastwards and situated at the tenth degree of the *Chang* (26th lunar mansion)." (CTS 36/14a.)

The CTS then continues, "On a *ting-yu* day in the eighth month [9th September] the (*hui*) comet appeared between the *Hsü* and the *Wei* (11th and 12th lunar mansions)." (CTS 36/14a.)

Considerable attention has been given to this comet, generally accepted as the ninth century Halley's comet; cf. for example PROCTOR and CROMMELIN (1937) p. 44 and CHU (1933). The CTS describes the comet in greater detail than the HTS, but the latter has been receiving all the attention probably because its account is copied by the WHTK, which is in turn copied by Williams. The description in the HTS says, "On a *ping-wu* day in the second month of the second year of the Khai-Chhêng reign-period [22nd March] a comet appeared at the *Wei* (12th lunar mansion). It measured over 7 ft (*chhih*) and was moving towards the *Nan-Tou* (ninth lunar mansion). On a *wu-shen* day [24th March] it appeared at the SW of the *Wei* (12th lunar mansion) and its rays had increased both in length and in intensity. On a *kuei-chhou* day [29th March] it was observed at the *Hsü* (11th lunar mansion). On a *hsin-yu* day [6th April] its length exceeded 10 ft (1 *chang*), and it was seen moving westward (with its tail) gradually pointing to the south. On a *jen-hsü* day [7th April] it appeared at the *Wu-Nü* (tenth lunar mansion), while its length was over 20 ft (2 *chang*) and its width 3 ft (*chhih*). On a *kuei-hai*

day [8th April] both its length and its width increased. On a *chia-tzu* day [9th April] it was seen at the *Nan-Tou* (eighth lunar mansion). On an *i-chhou* day [10th April] its length became 50 ft (5 *chang*), while its tail branched off into two, one pointing towards the *Ti* (third lunar mansion) and the other enveloping the *Fang* (fourth lunar mansion). On a *ping-yin* day [11th April] it measured 60 ft, but was no longer branched. It pointed northwards and appeared at the seventh degree of the *Khang* (second lunar mansion). On a *ting-mao* day [12th April] it went to the NW, pointing towards the E. On a *chi-ssu* day [14th April] it measured over 80 ft and was seen at the *Chang* (26th lunar mansion). On a *kuei-wei* day [28th April] it was about 3 ft long. It then disappeared at the right of *Hsien-Yuan*. It is normal for a comet to point westward when it appears in the morning and to point eastward when it appears in the evening. There had never been one that was pointing towards the four directions and trespassing against so many asterisms as this comet. On a *chia-shen* day [29th April] a 'guest star' appeared below the *Tung-Ching* (22nd lunar mansion). On a *wu-tzu* day [3rd May] a 'guest star' appeared separately within the *Tuan-Mên* ('Main-Gate') near *Phing-Hsing*. On a *ping-wu* day in the fourth month [21st May] the 'guest star' below the *Tung-Ching* (22nd lunar mansion) went out of sight. On a *kuei-yu* day in the fifth month [17th July] the 'guest star' within the *Tuan-Mên* went out of sight. On a *jen-wu* day [26th June] a 'guest star' resembling a (*po*) comet appeared by the side of the *Nan-Tou* (eighth lunar mansion) and *Thien-Yo*. On a *ting-yu* day in the eighth month [9th September] a (*hui*) comet appeared at the *Hsü* and the *Wei* (11th and 12th lunar mansions)." (HTS 32/7a; WHTK 286/24a; WHTK 294/10b; W205, W206, W207, W208, W209, W210 and W211; B(1).)

The WHTK splits this account from the HTS and puts the parts into separate sections. Hence two comets and three "guest stars" are listed by Williams. The three "guest stars" are also included in Biot's *Catalogue of Extraordinary Stars* and in LUNDMARK (1921). Hsi, however, suggests that the five separate entries in Williams' list all refer to one and the same comet. SHKLOVSKY and SHAJN tried to relate the "guest star" on 29th April 837 with the radio point source ( $\alpha = 6^{\text{h}} 14^{\text{m}}$ ,  $\delta = +22^{\circ} 38'$ ). The position of this radio source is at the NW of the *Tung-Ching* (22nd lunar mansion), but the text clearly says that the "guest star" was below it. A nova corresponding to the description of the text would be either at the extreme south of Gemini or at the north of Monoceros. The three "guest stars" are only mentioned by the HTS and copied by the WHTK, but is not found in the CTS and the THY. The THY (43/4b) gives a rather brief account without any reference to the three "guest stars" and the (*hui*) comet of 9th September. The TCKM (49/135a) merely states that in spring, during the third month of the second year of the Khai-Chhêng reign-period a (*hui*) comet was seen.

The Japanese records, "On a *ting-mao* day, the fourth day in the third month of the fourth year of the Shōwa reign-period [12th April] a comet appeared at the SE, with its rays extending eastward towards the horizon. On a *jen-shen* day [17th April] the comet was still visible, but its brightness was dwarfed by that of the moon and its rays had also diminished." (*Soku Nihon Kōki* 6/4b and 6/5b; *Dainihonshi* ch. 359; K.)

(292) 10th November, 838. "On the 19th day in the tenth month of the third year [of the Khai-Chhêng reign-period] a (*hui*) comet measuring 20 ft (2 *chang*) was seen. On the 20th night [11th November] it measured 25 ft. On the 21st night [12th November] it measured 30 ft. On the 22nd night [13th November] it measured 35 ft and was found above *Chhen* (Antares), pointing towards the *Chen* (28th lunar mansion). On the night of an *i-mao* day [21st November], the first day in the 11th month the comet appeared from the east stretching across the heavens from east to west. On a *kuei-yu* day in the first month of the fourth year of the Khai-Chhêng reign-period [7th February, 839] the comet appeared at the west at 14 degrees from the (*Ying*-) *Shih* (13th lunar mansion). On the 23rd day of the intercalary month [12th March] it was seen at the north of *Chüan-Shê*, where it appeared for a total of 33 days before it went out of sight on the 26th day (in the following month) [13th April]." (CTS 36/14a.)

Williams quotes from the WHTK, which copies from the HTS and gives four separate entries as follows:

(a) "On an *i-ssu* day in the tenth month of the third year of the Khai-Chhêng reign-period [11th November] a (*hui*) comet appeared at the 'box' of the *Chen* (28th lunar mansion), measuring over 20 ft (2 *chang*). It gradually increased in length and pointed towards the W." (HTS 32/7a; WHTK 286/24a; W212.)



(b) "On an *i-mao* day in the 11th month of the third year of the Khai-Chhêng reign-period [21st November] a (*hui*) comet appeared at the E within the *Wei* and the *Chi* (sixth and seventh lunar mansions), stretching across the heavens from E to W. On a *jen-chhen* day in the 12th month [28th December] it went out of sight." (HTS 32/7a; WHTK 286/24a; W213.)

(c) "On a *kuei-yu* day in the first month of the fourth year of the Khai-Chhêng reign-period [7th February, 839] a (*hui*) comet was seen at *Yü-Lin*." (HTS 32/7a; WHTK 286/24b; W214.)

(d) "On a *ping-yu* day in the intercalary (first) month of the fourth year of the Khai-Chhêng reign-period [12th March] a (*hui*) comet appeared at the NW of *Chüan-Shê*. It went out of sight on a *chi-mao* day in the second month [14th April]." (HTS 32/7a; WHTK 286/24b; W215; Hsi.)

The THY only differs from the CTS in details. It says, "On the 19th day in the tenth month of the third year of the Hui-Chhang [should read 'Khai-Chhêng'] reign-period [10th November] a (*hui*) comet appeared above *Chhen* (Antares) measuring over 20 ft (2 *chang*). On the night of the 20th day [11th November] it appeared above *Chhen* (Antares) measuring 35 ft [should read 25 ft]. On the night of the 21st day [12th November] it appeared at *Chhen* (Antares) measuring 30 ft. It was pointing westward towards the south-eastern star of the *Chen* (28th lunar mansion). On the night of the 22nd day [13th November] it appeared at *Chhen* (Antares) measuring 35 ft and pointing westward at the 'head' of the *Chen* (28th lunar mansion)." "On the 13th day in the first month of the fourth year of the Hui-Chhang (should read 'Khai-Chhêng') reign-period (31st January, 839) a (*hui*) comet appeared at the south of the (*Ying*-)*Shih* (13th lunar mansion). It passed the (*Tung*-)*Pi*, the *Khuei*, the *Lou* and the *Wei* (14th, 15th, 16th and 17th lunar mansions). Until the 13th day in the intercalary second month (should perhaps read, '23rd day in the intercalary first month', i.e. 12th March) it was again seen at the north of *Chüan-Shê*. It lasted a total of 33 days. Later, on the 24th and the 25th days (in the second month) [11th and 12th April] the weather was cloudy. When it cleared up on the 26th day [13th April] the comet had already gone out of sight." (THY 43/5a.)

The Japanese records, "On the 22nd day in the tenth month of the fifth year of the Shōwa reign-period of Nimmyō-tennō [12th November, 838] a (*hui*) comet appeared at night in the SE. Its vapour was of a reddish-white colour. It extended several *ri* [1 *ri* = 2.44 miles approx.] across the heavens and disappeared after a short while. On the 26th day [16th November] the comet was still visible. On the 23rd day in the first month of the sixth year [10th February, 839] the comet appeared in the east measuring over 10 ft (1 *chang*)." (*Soku Nihon Kōki* 7/15b and 8/3b; *Dainihonshi* ch. 359; K.)

(293) 20th March, 840. "On a *kêng-shen* day in the second month of the fifth year of the Khai-Chhêng reign-period a (*hui*) comet appeared between the *Ying-Shih* and the *Tung-Pi* [13th and 14th lunar mansions] lasting 20 days." (HTS 32/7a; WHTK 286/24b; W216; Hsi.)

(294) 3rd December, 840. "On a *wu-yin* day in the 11th month of the fifth year of the Khai-Chhêng reign-period a (*hui*) comet appeared in the E." (HTS 32/7a; WHTK 286/24b; W217.)

(295) July-August, 841. "During the second month of the first year of the Hui-Chhang reign-period [22nd July to 19th August] a (*hui*) comet appeared between *Yü-Lin* and the *Ying-Shih* and the *Tung-Pi* (13th and 14th lunar mansions)." (WHTK 286/24b; W218.)

(296) 22nd December, 841. "On a *jen-yin* day in the 11th month of the first year of the Hui-Chhang reign-period a (*hui*) comet appeared at *Pei-Lo-Ssu-Mên*. It was later found in the *Ying-Shih* (13th lunar mansion) and then it entered the *Tzu-Wei* (Enclosure). It went out of sight on a *hsin-mao* day in the 12th month [9th February, 842]." (HTS 32/7b; CTS 36/14b; THY 43/5a; WHTK 286/24b; W219.)

The Japanese records, "On the sixth day in the 11th month of the eighth year of the Shōwa reign-period [22nd December, 841] a (*hui*) comet appeared lasting until the 26th day [11th January, 842]." (*Dainihonshi* ch. 359; K.)

(297) March-April, 852. "During the third month of the sixth year of the Ta-Chung reign-period [25th March to 22nd April] a (*hui*) comet appeared at the *Tsui* and the *Shen* (20th and 21st lunar mansions)." (HTS 32/7b; WHTK 286/24b; W220; Hsi.) The text continues with

the astrological interpretation saying, "The *Shen* was the lunar mansion [governing] the Thang [Dynasty]." This is translated by Williams as "the comet was near the star *Tang*, an unascertained star near Orion." Williams also gives the wrong date.

The Japanese records, "On the 20th day in the second month of the second year of the Ninju reign-period [14th March, 852] a (*hui*) comet measuring 50 ft was seen in the W." (*Dainihonshi* ch. 359; K.)

(298) 23rd February, 855. The Japanese records, "On the third day in the second month of the second year of the Seikō reign-period a (*chhang-hsing*) comet was seen." (*Dainihonshi* ch. 359; K.)

(299) 22nd September, 857. "On an *i-wei* day in the ninth month of the 11th year of the Ta-Chung reign-period a (*hui*) comet appeared at the *Fang* (fourth lunar mansion) measuring 3 ft." (HTS 32/7b; THY 43/5b; WHTK 286/24b; W221.)

Williams gives September, 27.

(300) 21st June, 864. "On a *chi-hai* day in the fifth month of the fifth year of the Hsien-Thung reign-period a (*hui*) comet was seen in the NE at a quarter-hour (*kho*) before day-break. It was yellowish-white, measured 3 ft (*chhik*) and was found at the *Lou* (16th lunar mansion)." (HTS 32/7b; TCKM 50/126b; WHTK 286/24b; W222.)

The TCKM gives "third month" (10th April to 9th May).

The Japanese records a (*hui*) comet on 23rd April saying, "On the 14th day in the third month of the 16th year of the Jōkwan reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

There is not sufficient evidence to decide whether these records refer to one or two separate comets.

(301) 22nd December, 867. The Japanese records, "On the 23rd day in the 11th month of the ninth year of the Jōkwan reign-period a (*hui*) comet was observed." (*Dainihonshi* ch. 359; K.)

(302) January, 868. *The Chronicle of Silla* says, "During the 12th month of the seventh year of Kyōngmun Wang [30th December, 867 to 28th January, 868] a 'guest star' trespassed against Venus." (*Samguk Sagi* 11/5.)

(303) February, 868. "During the first month of the ninth year of the Hsien-Thung reign-period [29th January to 26th February] a (*hui*) comet appeared at the *Lou* and the *Wei* (16th and 17th lunar mansions)." (HTS 32/7b; WHTK 286/25a; W223.)

(304) September–October, 869. "During the eighth month of the tenth year of the Hsien-Thung reign-period [10th September to 8th October] a (*hui*) comet was seen at *Ta-Ling* pointing NE." (HTS 32/7b; WHTK 286/25a; W224.)

Williams says "NE of *Ta-Ling*".

(305) March–April, 875. *The Chronicle of Silla* says, "In spring, during the second month of the 15th year of Kyōngmun Wang [12th March to 9th April] a (*po*) comet appeared in the E for a period of 20 days." (*Samguk Sagi* 11/6.)

(306) 5th June, 875. The Japanese records, "On the 28th day in the fourth month of the 17th year of the Jōkwan reign-period a (*hui*) comet with a red colour and pointed rays appeared at the NE. On the second day in the fifth month [9th June] it measured over 10 ft, leaving *Wu-Chhê* and sweeping *Pa-Ku* to some extent. On the 18th day [should read '17th day', i.e., 24th June] a (*po*) comet was seen." (*Dainihonshi* ch. 359; K.)

(307) 11th February, 877. The Japanese records, "On the 25th day in the first month of the first year of the Genkei reign-period a 'guest star' appeared to the west of the (*Tung*-) *Pi* (14th lunar mansion)." (*Dainihonshi* ch. 359; K; Hsi.)

(309) 885. "During the first year of the Kuang-Chhi reign-period a (*hui*) comet was seen between *Chi-Shui* and *Chi-Hsin*." (HST 32/7b; WHTK 286/25a; W226.)

(310) 13th June, 886. "On a *ping-hsü* day in the fifth month of the second year of the Kuang-Chhi reign-period a (*po*) comet appeared between the *Wei* and the *Chi* (sixth and seventh lunar mansions) and passed *Pei-Tou* and *Shê-Thi*." (HTS 32/7b; THY 43/5b; WHTK 286/25a; W227.)

(311) 16th November, 886. "On a *jen-hsü* day in the tenth month of the second year of the Kuang-Chhi reign-period a star was seen coming from the west, white in colour and 15 ft long, bent at an angle; [eventually] it fell [like a meteor]. According to the traditional interpretation, this was a *chhang-kêng*..." (HTS 32/11b). cf. NEEDHAM, BEER and HO (1957.)

(312) June, 892. "During the fifth month of the first year of the Ching-Fu reign-period [30th May to 27th June] a *Chhih-Yu* banner was observed. At first (it appeared as) a white (*hui*) comet shaped like the hair measuring about 2 ft (*chhih*). After several days it stretched downwards from mid-heaven to the horizon, (on top) like a roll of cloth and (below) like a serpent." (HTS 32/7b; WHTK 286/25a.)

(313) 12th May, 891. "On a *kêng-chhen* day in the fourth month of the second year of the Ta-Shun reign-period a (*hui*) comet appeared at *San-Thai*. It moved towards the east, entered the *Thai-Wei* (Enclosure) and swept *Ta-Chio* and the *Thien-Shih* (Enclosure). It was over 100 ft (10 *chang*) long. On a *chia-hsü* day in the fifth month [5th July] it disappeared." (HTS 32/7b; TCKM 52/63b; WHTK 286/25a; W228.)

The Japanese records, "On the last day in the third month of the third year of the Kwampyō reign-period [11th May] a 'guest star' appeared at the east of *Tung-Hsien*." (*Dainihonshi* ch. 359; K; Hsi.)

(314) 28th December, 892. "On a *ping-tzu* day in the 12th month of the first year of the Ching-Fu reign-period a (*thien-chhan*) comet was seen in the SW. On a *chi-mao* day (31st December) it turned into a cloud and faded away." (HTS 32/8a; WHTK 286/25b.)

(315) 6th May, 893. "On an *i-yu* day in the fourth month of the second year of the Ching-Fu reign-period a (*hui*) comet measuring over 100 ft (10 *chang*) appeared at *Shang-Thai* when the clouds cleared up at night [after many days of overcast sky]. It moved eastward, entered the *Thai-Wei* (Enclosure), swept *Ta-Chio* and entered the *Thien-Shih* (Enclosure). After 37 days its length increased to over 200 ft (20 *chang*). It then became concealed by clouds." (HTS 32/8a; WHTK 286/25b; W230.)

(316) February–March, 894. "During the first month of the first year of the Chhien-Ning reign-period [10th February to 10th March] a (*po*) comet appeared at *Chhun-Shou* [i.e., from the 16th degree of *Tung-Ching* the 22nd lunar mansion to the eighth degree of *Lou* the 24th lunar mansion]." (WHTK 286/25b; W231.)

The Japanese records, "In the second month of the sixth year of the Kwampyō reign-period [11th March to 9th April] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(317) August, 894. "During the seventh month of the first year of the Chhien-Ning reign-period [28th July to 25th August] an 'ominous star' (*yao-hsing*) was observed. It was neither a (*hui*) nor a (*po*) comet. Its name was not known and people called it an 'ominous star' (*yao-hsing*) or 'evil star' (*o-hsing*)." (HTS 32/8a.)

(318) November–December, 896. "During the tenth month of the third year of the Chhien-Ning reign-period [11th November to 12th December] three 'guest stars', one large and two small, appeared between the *Hsü* and the *Wei* (11th and 12th lunar mansions). Sometimes they approached one another and sometimes they separated from one another. They moved together eastward giving the illusion as if they were fighting among themselves. After three days the two smaller ones disappeared, while the larger one later faded away between the *Hsü* and the *Wei* (11th and 12th lunar mansions)." (HTS 32/8a; WHTK 294/10b; B(1).)

(319) *February*, 900. "During the first month of the third year of the Kuang-Hua reign-period [4th February to 3rd March] a 'guest star' was seen at the Central (Palace) [i.e., the *Thai-Wei* Enclosure], by the side of *Huan-Chê*. It was as large as a peach, while its rays extended to *Huan-Chê* and concealed it from view." (HTS 32/8a; WHTK 294/11a; B(1); L; Hsi.)

(320) *February-March*, 902. "During the first month of the second year of the Thien-Fu reign-period [11th February to 12th March] a 'guest star', of the size of a peach, appeared at the *Tzu-Wei* (Enclosure) beneath *Hua-Kai*. It gradually moved towards *Yü-Nü*. On a *ting-mao* day [2nd March] a meteor rose from *Wên-Chhang* and reached the 'guest star' which was then remaining stationary. On a *chi-ssu* day [4th March] the 'guest star' was by the side of and guarding *Kang*. In the following year it was still visible." (HTS 32/8a; WHTK 294/11a; B(1); Hsi.)

(321) *18th May*, 905. "On a *kêng-tzu* day in the fourth month of the second year of the Thien-Yu reign-period a star resembling Venus appeared at the NW corner during the evening. It emitted rays from the top like a (*hui*) comet measuring 30 or 40 ft (3 or 4 *chang*) and was blood-red in colour. On a *hsin-chhou* evening [19th May] its colour resembled that of white silk." (HTS 32/8b.)

The HTS continues, "On a *chia-chhen* day in the fourth month of the second year of the Thien-Yu reign-period [22nd May] a (*hui*) comet appeared at *Pei-Ho* penetrating *Wên-Chhang*. It measured over 30 ft (3 *chang*) and pressed against *Chung-Thai* and *Hsia-Thai*. On an *i-chhou* night in the fifth month [12th June] it reached the western wall of the *Thien-Shih* (Enclosure) starting from the left corner of *Hsien-Yuan*. Its brightness was very intense and its length stretched across the heavens. On a *ping-yin* day [13th June] the sky was overcast, and when it cleared up on a *hsin-wei* day [18th June] the comet had already disappeared." (HTS 32/8b; THY 43/5b; TCKM 53/70a; WHTK 286/25b; W232.)

The Japanese records, "On the 15th day in the fourth month of the fifth year of the Engi reign-period [21st May] a (*hui*) comet appeared in the NW. On the 24th day [30th May] the rays measured over 300 ft pointing SE; on the 25th day [31st May] it stretched across the heavens; on the first day in the fifth month [6th June] it gradually diminished in size, and after another 3 days [on 8th June] the comet went out of sight." (*Dainihonshi* ch. 359; K.)

(322) *7th April*, 907. The Japanese records, "On the 22nd day in the second month of the seventh year of the Engi reign-period a (*hui*) comet was seen. On the 24th day [8th June] it trespassed against Venus and measured about 30 ft. It went out of sight on the last day of the month [15th April]." (*Dainihonshi* ch. 359; K.)

(323) *March*, 908. *The Chronicle of Silla* says, "In spring, during the second month of the 12th year of Hyogong Wang [5th March to 3rd April] a (*po*) comet was seen in the E." (*Samguk Sagi* 12/2.)

(324) *June*, 911. "During the fifth month of the first year of the Chhien-Hua reign-period [31st May to 28th June] a 'guest star' trespassed against *Ti-Tso*." (WTSC 59/2b; WHTK 294/11a; *Hsü Thang Shu* 14/1b; B(1); L; Hsi.)

(325) *15th May*, 912. "On the night of a *chia-hsü* day in the fourth month of the second year of the Chhien-Hua reign-period of Liang-Thai-Tsu a (*hui*) comet was seen at the west of *Ling-Thai*." (CWTS 139/3b; WTSC 59/3a; WTHY 10/18a; WHTK 286/26a; *Hsü Thang Shu* 14/1b; W233.)

The WHTK and the *Hsü Thang Shu* say, "On a *jen-shen* day [13th May] the comet appeared at the *Chang* (26th lunar mansion) and on a *chia-hsü* day [15th May] it appeared at the asterism *Ling-Thai*."

The Japanese records, "On the third day in the sixth month of the 12th year of the Engi reign-period [19th July] a (*hui*) comet appeared in the NW. On the eighth day [24th July] it appeared at the SE. On the ninth day [25th July] it reappeared in the NW and on the 12th day [28th July] the comet was seen in the W." (*Dainihonshi* ch. 359; K.)

CHU WÊN-HSIN (1933) suggests that this was Halley's comet; cf. also SCHÖVE (1955).

(326) 7th November, 918. The Japanese records, "On the first day in the tenth month of the 18th year of the Engi reign-period a (*hui*) comet appeared in the SW and lasted three days." (*Dainihonshi* ch. 359; K.)

(327) 923. "During the third year of the Lung-Tê reign-period of Hou-Liang a (*hui*) comet was seen." (TCKM 55/42a.)

(327\*) 30th October, 925. "On a *kêng-wu* day in the tenth month of the third year of the Thung-Kuang reign-period a (*hui*) comet appeared in the SW measuring over 10 ft. It was pointing SE and was found at the fifth degree (*tu*) within the (*Chhien*-)*Niu* (ninth lunar mansion)." (*Hsü Thang Shu* 14/2a.)

(328) 13th December, 928. "On the night of a *kêng-wu* day in the tenth month of the third year of the Thien-Chhêng reign-period of Thang Ming-Tsung there was a (*po*) comet in the SW measuring over 10 ft and pointing SE. It was found at the fifth degree (*tu*) within the (*Chhien*-)*Niu* (ninth lunar mansion)." (CWTS 139/3b; WTSC 59/4b; WTHY 10/18b; WHTK 286/26a; W234.)

The WHTK says that the comet went out of sight after three days. Williams overlooks the leap year and gives the date as 14th October. The description of this comet is exactly the same as that for the comet of 30th October, 925 mentioned in the *Hsü Thang Shu*. It is very likely that the two descriptions actually refer to the same comet in the year 928, but Chhen Chan (1753-1817) the author of the *Hsü Thang Shu* has confused the date.

(329) June to August, 930. The Japanese records, "From the fifth month to the seventh month of the eighth year of the Enchô reign-period a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(330) 3rd October, 932. The Korean records, "On a *kêng-chhen* day in the ninth month of the 15th year of T'aejo a large star appeared in the E. It presently changed into a vapour." (*Koryô-sa* ch. 47.)

This is mentioned in the section of "guest stars" in the *Koryô-sa*, but apparently it was a meteor.

(331) 19th December, 934. "On a *ting-wei* day in the 11th month of the first year of the Chhing-Thai reign-period a (*hui*) comet appeared at the *Hsü* and the *Wei* (11th and 12th lunar mansions). It swept *Thien-Lei* and *Khu-Hsing*." (*Hsü Thang Shu* 14/4a.)

(332) 21st September, 936. "On a *chi-chhou* day in the ninth month of the third year of the Chhing-Thai reign-period of Mo-Ti a (*hui*) comet appeared at the *Hsü* and the *Wei* (11th and 12th lunar mansions). It was small in magnitude, measuring over 1 ft. It passed *Thien-Lei* and *Khu-Hsing*." (CWTS 139/3b; WTHY 10/18b; WHTK 286/26a; *Hsü Thang Shu* 14/4a; W235.)

Williams gives the date as 28th October.

(333) 31st January, 928. "On a *ping-wu* day in the 12th month of the first year of the Sheng-Yuan reign-period a (*po*) comet was seen in the N." (NTS 1/4a; *Hsü Thang Shu* 14/4b.)

(334) April, 941. The Japanese records, "During the third month of the fourth year of the Tenkei reign-period a star appeared in the W. It was bright and looked like a white rainbow. It had a small head, but a large tail. It lasted two months before going out of sight." (*Dainihonshi* ch. 359; K.)

(335) August-September, 941. "During the eighth month of the fifth year of the Shêng-Yuan reign-period [25th August to 23rd September] a (*po*) comet several feet in length was seen at the *Thien-Shih* (Enclosure). It disappeared after 70 days." (NTS 1/7b.) Ma Ling's version of the *Nan Thang Shu* 1/8a (written in 1105) says that the comet was observed in a *jen-tzu* day in the ninth month. However, the *jen-tzu* day fell on the eighth month that year on 18th September.

The CWTS says, "During the ninth month of the sixth year of the Thien-Fu reign-period Chin Kao-Tsi [24th September to 22nd October] a (*hui*) comet measuring over 10 ft (1 *chang*) was seen." (CWTS 139/3b; WHTK 286/26a; WTHY 10/18b; W236.)

The WHTK says that this comet appeared on a *jen-tzu* day (18th September) and swept the *Thien-Shih* Enclosure.

The *Liao Shih* says, "On a *jen-shen* day in the ninth month of the fourth year of the Hui-Thung reign-period [8th October, 941] a (*po*) comet appeared at the division of Chin." (*Liao Shih* 4/7a; HWHTK 212/57b; W270.)

Williams gives "the eighth month", hence a different date.

(336) 5th November, 943. "On a *kêng-hsü* night in the tenth month of the eighth year of the Thien-Fu reign-period a (*hui*) comet appeared in the E pointing W. Its tail measured 10 ft (1 *chang*) and it was found at the 9th degree (*tu*) of the *Chiao* (first lunar mansion)." (CWTS 139/3b; CTSC 59/6a; NTS 2/2a; NTS (Ma Ling) 2/7a; WTHY 10/18b; WHTK 286/26a; *Hsü Thang Shu* 14/5a; W237.)

The WHTK says that the length was 1 ft (*chhih*).

(337) 20th February, 947. The Japanese records, "On the 27th day in the first month of the first year of the Tenryaku reign-period a strange star appeared in the W. It was known as a 'lance star'." (*Dainihonshi* ch. 359; K.)

(338) 12th September, 947. "On a *ting-chhou* night in the intercalary seventh month of the fifth year of the Pao-Ting reign-period a (*hui*) comet appeared in the E near the horizon. Its tail swept *Shao-Wei* by the side. It reached *Chhang-Yuan* and went out of sight on a *jen-chhen* day in the eighth month (27th September)." (NTS 2/4a; *Hsü Thang Shu* 14/5a.)

(339) 2nd March, 946. The Japanese records, "On the 19th day in the first month of the second year of the Tenryaku reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(340) 13th March, 956. "On a *jen-hsü* night in the first month of the third year of the Hsien-Tê reign-period of Chou Thai-Tsu a (*po*) comet appeared at the corner of the *Shen* (21st lunar mansion) with its rays pointing SE." (CWTS 139/3b; WTSC 59/8b; WTHY 10/18b; NTS 2/8b; WHTK 286/26b; *Hsü Thang Shu* 14/5a; W238.)

The NTS and the *Hsü Thang Shu* gives "the second month".

(341) 15th March, 961. The Japanese records, "On the 27th day in the second month of the first year of the Owa reign-period a (*hui*) comet appeared in the SW. Its light resembled a wild fire." (*Dainihonshi* ch. 359; K.)

(342) 28th January, 962. "On a *chi-yu* day in the 12th month of the second year of the Chien-Lung reign-period a 'guest star' appeared at the *Thien-Shih* Enclosure to the east of *Jen-Hsing*. It had a tail and emitted some faint rays. On a *hsin-wei* day in the first month of the third year [19th February] it moved SW and entered the *Ti* (third lunar mansion). It went out of sight on a *kuei-chhou* day in the second month [2nd April] when it reached the *Chhi-Hsing* (25th lunar mansion)." (SS 56/24b; WHTK 294/11a; B(1); L.)

The SS gives "*chhi yüeh* (seventh month)" instead of "the *Chhi-Hsing* lunar mansion". Biot gives two separate entries, one on 28th January and one on 19th February.

(343) 12th May, 965. The Japanese records, "On the seventh day in the second month of the second year of the Kōhō reign-period a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(344) 8th January, 967. The Japanese records, "On the 25th day in the 11th month of the third year of the Kōhō reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(345) 1st February, 972. The Japanese records, "On the 14th day in the first month of the third year of the Tenroku reign-period a (*hui*) comet measuring over 4 ft (*chhih*) penetrated the moon." (*Dainihonshi* ch. 359; K.)

(346) 3rd August, 975. "On a *chia-tzu* day in the sixth month of the eighth year of the Khai-Pao reign-period a (*hui*) comet appeared at the *Liu* (24th lunar mansion) measuring 40 ft (4 *chang*). In the morning it was seen in the E pointing SW. It passed the *Yü-Kuei* (23rd lunar mansion) and reached the *Tung-Pi* (22nd lunar mansion). It passed [altogether] 11 [lunar mansions] before going out of sight after 83 days." (SS 56/21b; HTCKM 2/4a; WHTK 286/26b; W240.)

The NTS says, "During the third month of the *i-hai* year [14th April to 13th May, 975] a (*hui*) comet appeared at *Wu-Chhê*. It was white in colour and measured 5 ft (*chhih*). In summer during the sixth month [12th July to 9th August] it was seen in the W trespassing against the *Thai-Wei* (Enclosure). It went out of sight after 60 days." (NTS 3/6a; *Hsü Thang Shu* 14/5a; W239.)

The Japanese records, "On the 22nd day in the sixth month of the third year of the Ten-en reign-period [2nd August, 975] a (*hui*) comet shaped like a round fan and measuring 5 to 6 ft appeared in the NE. It was of a white colour and went out of sight after five days." "On the 23rd day in the sixth month of the third year of the Ten-en reign-period [3rd August] a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(347) 16th March, 977. The Japanese records, "On the 22nd day in the second month of the second year of the Teigen reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(348) 3rd April, 983. "On a *chia-chhen* day in the second month of the eighth year of the Thai-Phing-Hsing-Kuo reign-period a 'guest star' appeared at the east of the *Tuan-Mên* ('Main-Gate') of the *Thai-Wei* Enclosure near *Phing-Hsing* and moving northward." (SS 56/24b; WHTK 294/11a; B(1).)

(349) 12th August, 989. "On a *ting-hai* day in the seventh month of the second year of the Tuan-Kung reign-period a 'guest star' appeared at the NW of *Pei-Ho*. It became dimmer and developed some rays and a tail which pointed SW." (SS 56/24b; WHTK 294/11b; B(1).)

The WHTK gives the sixth instead of the seventh month.

(350) 13th August, 989. "On a *wu-tzu* day in the seventh month of the second year of the Tuan-Kung reign-period a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) and *Chi-Shui*. It was bluish-white and its rays gradually lengthened. In the morning it was seen at the NE for ten days and in the evening at the NW. It passed *Yu-Shê-Thi*. After 30 days it reached the *Khang* (second lunar mansion) and went out of sight." (SS 56/21b; HTCKM 2/72b; WHTK 286/26b; W241.)

Chu Wên-Hsin (1933) suggests that this was Halley's comet; cf. also SCHÖVE (1955).

The Japanese records, "On the first day in the sixth month of the first year of the Eiso reign-period [6th July] a (*hui*) comet appeared in the east and in the west. On the 13th day in the seventh month [16th August] it appeared in the E measuring about 5 ft. It lasted several days." (*Dainihonshi* ch. 359; K.)

The Korean says, "On a *chia-wu* day in the ninth month of the eighth year of Sŏngjong [18th October] a (*hui*) comet was seen." (*Koryŏ-sa* ch. 47.)

(351) 2nd February, 990. "On a *hsin-ssu* day in the first month of the first year of the Chhun-Hua reign-period a 'guest star' appeared at the *Chen* (28th lunar mansion). It retrograded and reached the *Chang* (26th lunar mansion). After passing 40 degrees (*tu*) within 70 days it went out of sight." (SS 56/24b; WHTK 294/11b; B(1).)

(352) 23rd February, 998. "On a *chia-shen* day in the first month of the first year of the Hsien-Phing reign-period a (*hui*) comet appeared at the north of the *Ying-Shih* (13th lunar mansion). Its rays measured over 1 ft. After 14 days it disappeared on a *ting-yu* day (8th March)." (SS 56/22a; HTCKM 3/1a; WHTK 286/26b; W242.)

The Japanese records, "On the 26th day in the first month of the fourth year of the Chōtoku reign-period [25th February] a (*hui*) comet measuring about 4 ft was seen at the E." (*Dainihonshi* ch. 359; K.)

(353) 23rd February, 1001. The Japanese records, "On the 27th day in the first month of the Chōhō reign-period a (*hui*) comet 2 ft long appeared at the north of *Thien-Chhuan* and south of *Chüan-Shê*." (*Dainihonshi* ch. 359; K.)

(354) 21st December, 1003. "On a *hsin-hai* day in the 11th month of the sixth year of the Hsien-Phing reign-period *Mou-Tou* trespassed against the *Yü-Kuei* (23rd lunar mansion)." (SS 56/22a; WHTK 286/26b.)

*Mou-Tou* has always been regarded as a synonym for the *Mao* (18th lunar mansion), or the Pleiades. However, we have here an exceptional case. The SS continues:

"On a *chia-yin* day in the 11th month of the sixth year of the Hsien-Phing reign-period [24th December] a (*hui*) comet appeared at the (*Tung*-) *Ching* and the (*Yü*-) *Kuei* [22nd and 23rd lunar mansions]. It was of the size of a cup and was bluish-white in colour. It measured over 4 ft. After passing *Wu-Chu-Hou* and *Wu-Chhê* and entering the *Shen* (21st lunar mansion) it went out of sight. It appeared for a total of 30 days." (SS 56/22a; HTCKM 3/19a; WHTK 286/27a; W243.)

Williams gives the date as 23rd December.

(355) 4th October, 1005. "On a *chia-chhen* day in the eighth month of the second year of the Ching-Tê reign-period a 'guest star' appeared by the side of the *Tzu-Wei* Enclosure and *Thien-Phou*, with rays shooting out like a (*po*) comet. Gradually it entered the Enclosure and passed *Yü-Nü* and *Hua-Kai*. After 11 days it went out of sight." (SS 56/24a; HTCKM 3/32b; WHTK 294/11b; B(1).)

(356) 3rd April, 1006. "On an *i-ssu* day in the third month of the third year of the Ching-Tê reign-period a 'guest star' was seen in the SE." (SS 56/25a; WHTK 294/11b; B(1); L; Hsi.) This is regarded as a radio source. (Hsi.)

The Japanese records, "On the second day in the fourth month of the third year of the Kwankō reign-period [1st May, 1006] a 'guest star' appeared at the south of *Chhi-Kuan*. It was as bright as Mars and lasted the whole night." (*Dainihonshi* ch. 359; K.)

(357) 1006. The Korean says, "During the ninth year of Mokchong a (*hui*) comet was observed." (*Koryō-sa* ch. 47.)

It is difficult to say whether this Korean record was in any way connected with the Chinese "guest star" of 3rd April in the same year.

(358) 8th February, 1011. "On a *ting-chhou* day in the first month of the fourth year of the Ta-Chung-Hsiang-Fu reign-period a 'guest star' appeared in front of the 'box' of the *Nan-Tou* (eighth lunar mansion)." (SS 56/25a; WHTK 294/11b; B(1); L; Hsi.)

(359) 12th February, 1014. "On a *ting-yu* day in the first month of the third year of the Khai-Thai reign-period of Shêng-Tsung a (*hui*) comet appeared in the evening at the W." (*Liao Shih* 15/7b; HWHTK 212/58a; W271.)

Williams gives the date as 10th February.

The Korean says, "On a *jen-tzu* day in the first month of the fifth year of Hyōnjong [27th February] a (*hui*) comet appeared at *Wu-Chhê*. On a *kêng-shen* day in the second month [7th March] the comet entered *Ta-Ling*." (*Koryō-sa* ch. 47.)

(360) 3rd August, 1018. The Japanese says, "On the 19th day in the sixth month of the second year of the Kwannin reign-period a (*hui*) comet measuring over 20 ft appeared in the NW. On the 20th day [4th August] the same observation was made, and on the 29th day [13th August] the rays had become more intense." (*Dainihonshi* ch. 359; K.)

The Korean says, "On a *kêng-hsü* day in the sixth month of the ninth year of Hyōnjong [3rd August] a (*hui*) comet appeared at the second star of *Pei-Tou*. Its rays pointed towards *Wên-Chhang* and *Thien-Lao* and measured over 40 ft." (*Koryō-sa* ch. 47.)

(361) 6th February, 1019. The Korean says, "On a *ting-ssu* day in the 12th month of the ninth year of Hyōnjong a (*hui*) comet appeared at the *Thien-Shih* Enclosure between *Tsung-Chêng*, *Chung-Jen* and *Shih-Lou*, pointing W." (*Koryō-sa* ch. 47.)



(362) 30th July, 1019. "On a *hsin-hai* day in the sixth month of the third year of the Thien-Hsi reign-period a (*hui*) comet appeared in the NE of the second star of the 'box' of *Pei-Tou*, measuring about 3 ft (*chhih*) and was in line with the first star of *Pei-Tou*. It moved northwards, passed *Thien-Lao* and swept *Wên-Chhang* and measured over 30 ft. After passing the *Tzu-Wei* Enclosure, *San-Thai* and *Hsien-Yuan* it moved faster westward until it reached the *Chhi-Hsing* (25th lunar mansion). After 37 days it went out of sight." (SS 56/22a; HTCKM 3/81b; WHTK 286/27a; W244.)

The WHTK gives "the second year" and hence Williams gives the date as 4th August, 1018.

(363) 26th January, 1020. The Korean says, "On a *hsin-hai* day in the 12th month of the tenth year of Hyōnjong a (*hui*) comet appeared between *Tsung-Chêng*, *Tsung-Jen* and *Shih-Lou*." (*Koryō-sa* ch. 47.)

(364) 25th May, 1021. "On a *ping-chhen* day in the fourth month of the fourth year of the Thien-Hsi reign-period a 'guest star' appeared at the NW of the front star of *Hsien-Yuan*. It was as large as a plum. It moved rapidly past the large star of *Hsien-Yuan* (Regulus), entered the *Thai-Wei* Enclosure, concealed the star *Yu-Chih-Fa*, trespassed against *Tzhu-Chiang* and passed *Phing-Hsing* from the NW. After 75 days it entered the horizon and went out of sight." (SS 56/25a; WHTK 294/11b; B(1).)

Biot gives the date wrongly as 10th June, 1018.

The Korean says, "On a *jen-hsü* day in the fourth month of the 12th year of Hyōnjong [31st May] an 'ominous star' was seen within the *Thai-Wei* Enclosure." (*Koryō-sa* ch. 47.)

(365) 17th February, 1029. The Japanese records, "On the second day in the second month of the second year of the Chōgen reign-period a (*hui*) comet measuring 6 to 7 ft appeared in the E. It went out of sight after 12 days." (*Dainihonshi* ch. 359; K.)

(366) 15th July, 1032. "On an *i-ssu* day in the sixth month of the 1st year of the Ming-Tao reign-period a 'guest star' appeared at the NE above the horizon and with rays shooting out like a comet. It went out of sight on a *ting-ssu* day [27th July] after appearing for 13 days." (SS 56/25a; WHTK 294/12a; B(1); Hsi.)

(367) 5th March, 1033. "On a *wu-hsü* day in the second month of the second year of the Ming-Tao reign-period of Jen-Tsung a '*Han-Yü*' star was seen at the NE. It was of a yellowish-white colour and its rays measured about 2 ft (*chihh*). . . some people regarded it as (*hui*) comet." (SS 56/21b; WHTK 286/27a; HTCKM 4/22b.)

The HTCKM records it as a (*hui*) comet.

The Japanese records, "On the third day in the second month of the sixth year of the Chōgen reign-period [6th March] a white (*hui*) comet measuring about 6 ft appeared in the E." (*Dainihonshi* ch. 359; K.)

(368) 20th September, 1034. "On a *jen-hsü* night in the eighth month of the first year of the Ching-Yu reign-period a (*po*) comet appeared at the *Chang* and the *I* (26th and 27th lunar mansions). It was 7 ft (*chhih*) long and 5 in. (*tshun*) wide. After 12 days it went out of sight." (SS 56/22a; HTCKM 4/32a; WHTK 286/27a; W245.)

Williams gives "second year" following WHTK and hence his date "15th September, 1035". The Japanese records, "On the 13th day in the eighth month of the seventh year of the Chōgen reign-period [28th September, 1034] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(369) 15th January, 1035. "On a *chi-wei* day in the 12th month of the first year of the Ching-Yu reign-period a star appeared at night at *Wai-Phing*. It had vaporous rays." (SS 56/22a; WHTK 286/27a; W246.)

Williams gives "second year" hence his date "15th January, 1036".

(370) 19th March, 1037. The Korean says, "On a *kuei-yu* day in the second month of the third year of Chōngjong five (*hui*) comets each measuring 5 to 6 ft were seen." (*Koryō-sa* ch. 47.)

(371) *September, 1041.* The Korean says, "During the eighth month of the seventh year of Chǒngjong [30th August to 27th September] a (*hui*) comet about 30 ft long appeared at the E and went out of sight after more than 20 days." (*Koryŏ-sa* ch. 47.)

(372) *November, 1041.* The Korean says, "During the tenth month of the seventh year of Chǒngjong [28th October to 26th November] a (*hui*) comet measuring about 30 ft appeared at the E for more than 10 days." (*Koryŏ-sa* ch. 47.)

(373) *10th March, 1049.* "On a *ting-mao* day in the second month of the first year of the Huang-Yu reign-period a (*hui*) comet appeared at the *Hsü* (11th lunar mansion). In the morning it was observed in the E pointing SW. It passed the *Tzu-Wei* Enclosure and reached the *Lou* (16th lunar mansion). It went out of sight after 114 days." (SS 56/22b; WHTK 286/27b; HTCKM 5/28a; W247.)

(374) *25th February, 1053.* The Korean says, "On an *i-hai* day in the second month of the seventh year of Munjong a (*hui*) comet over 10 ft long appeared at *Khu-Lou* and then entered the *I* (27th lunar mansion)." (*Koryŏ-sa* ch. 47.)

(375) *4th July, 1054.* "On a *chi-chhou* day in the fifth month of the first year of the Chih-Ho reign-period a 'guest star' appeared at the SE of *Thien-Kuan*, measuring several inches (*tshun*). After more than a year it faded away." (SS 56/25a; WHTK 294/12a; B(1); L; Hsi.)

The Crab Nebula in Taurus, NGC 1952 (M1) is said to be its remnants.

The Japanese records, "During the fourth month of the second year of the Tenki reign-period [10th May to 8th June, 1054] a 'guest star' was sighted." (*Dainihonshi* ch. 359; K.)

(376) *August–September, 1056.* "During the seventh month of the first year of the Chia-Yu reign-period [14th August to 11th September] a (*hui*) comet appeared at the *Tzu-Wei* (Enclosure) and reached the *Chhi-Hsing* (25th lunar mansion). It was white in colour and measured more than 10 ft (1 *chang*). It went out of sight on a *kuei-hai* day in the eighth month [25th September]." (SS 56/22b; WHTK 286/27b; HTCKM 5/60b; W248.)

The Japanese records, "On the 28th day in the seventh month of the fourth year of the Tenki reign-period [10th September] a (*hui*) comet appeared at the E measuring about 2 ft. On the eighth day of the eighth month [19th September] it measured about 20 ft and was of a white colour." (*Dainihonshi* ch. 359; K.)

(377) *5th September, 1057.* The Japanese records, "On the fourth day in the eighth month of the fifth year of the Tenki reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(378) *22nd December, 1060.* The Japanese records, "On the 27th day in the 11th month of the third year of the Kōhei reign-period a (*hui*) comet about 5 ft long appeared in the S and disappeared after five days." (*Dainihonshi* ch. 359; K.)

(379) *11th September, 1065.* "On a *ping-shen* day in the eighth month of the first year of the Hsien-Yung reign-period a 'guest star' trespassed against *Thien-Miao*." (*Liao Shih* 22/3b; HWHTK 215/31b; Hsi.)

The Korean says, "On an *i-mao* day in the sixth month of the 19th year of Munjong (1st August, 1064) a 'guest star' as large as a lamp was seen." (*Koryŏ-sa* ch. 47.)

(380) *2nd April, 1066.* "On a *chi-wei* day in the third month of the third year of the Chih-Phing reign-period a (*hui*) comet appeared at the *Ying-Shih* (13th lunar mansion). In the morning it was seen at the E measuring about 7 ft, pointing SW towards the *Wei* (12th lunar mansion) and reaching *Fên-Mu*. It gradually moved faster towards the east and became concealed when it approached the Sun. Until the evening on a *hsin-ssu* day [24th April] it appeared at the NW, but without its rays. The comet moved further eastward. Then there was a white vapour about 3 ft in width penetrating the *Tzu-Wei* (Enclosure) and the Pole Star, joining the *Fang* (fourth lunar mansion) and with both its head and its tail getting below the horizon. The comet moved further eastward, passed *Wên-Chhang* and *Pei-Tou* and penetrated the *Wei*

(sixth lunar mansion). On a *jen-wu* day [25th April] the comet retained its rays and measured over 10 ft (1 *chang*) in length and 3 ft in breadth. It was pointing NE and then it passed *Wu-Chhê*. The white vapour became branched, stretching horizontally across the heavens, and penetrated *Pei-Ho*, *Wu-Chu-Hou*, *Hsien-Yuan* and *Wu-Ti-Tso* and *Nei-Wu-Chu-Hou* within the *Thai-Wei* (Enclosure). It reached the *Chio*, the *Khang*, the *Ti* and the *Fang* (first, second, third and fourth lunar mansions). On a *kuei-wei* day [26th April] the comet measured 15 ft. It had a broom-like vapour and resembled a ten-peck measure. From the *Ying-Shih* (13th lunar mansion) it moved to the *Chang* (26th lunar mansion) passing altogether 14 lunar mansions. The comet and the vapour went out of sight after a total of 67 days." (SS 56/22b; WHTK 286/27b; HTCKM 5/15b; W249.)

The HTCKM gives "the second month".

The *Liao Shih* says, "On a *jen-wu* day in the third month of the second year of the Hsien-Yung reign-period [24th April] a (*hui*) comet was seen in the W." (*Liao Shih* 22/4a; HWHTK 212/58a; W272.)

This was the well-known Halley's comet of 1066; cf. PROCTOR and CROMMELIN (1937) p. 44.

The Korean says, "On a *ting-chhou* day in the third month of the 20th year of Munjong (19th April) a star like a moon rose from the NW. Presently it transformed into a comet." (*Koryô-sa* ch. 47.)

The Japanese records, "On the sixth day in the third month of the second year of the Chiryaku reign-period [22nd April] a (*hui*) comet measuring 7 ft appeared in the E. It went out of sight after 20 days, but another five days later it reappeared in the W." (*Dainihonshi* ch. 359; K.)

(381) 12th July, 1069. "On a *ping-chhen* day in the sixth month of the second year of the Hsi-Ning reign-period a 'guest star' appeared at the longitudes of the *Chi* (seventh lunar mansion). On a *ting-mao* day in the seventh month [23rd July] it trespassed against the *Chi* (seventh lunar mansion) and then went out of sight." (SS 56/25a; WHTK 294/12a; B(1).)

(382) 25th December, 1070. "On a *ting-wei* day in the 11th month of the third year of the Hsi-Ning reign-period a 'guest star' appeared at *Thien-Chün*." (SS 56/25a; WHTK 294/12a; B(1); L; Hsi.)

(383) 9th October, 1073. The Korean says, "On a *ting-chhou* day in the eighth month of the 27th year of Munjong a 'guest star' appeared at the south of the *Tung-Pi* (14th lunar mansion)." (*Koryô-sa* ch. 47.)

(384) 19th August, 1074. The Korean says, "On a *kêng-shen* day in the seventh month of the 28th year of Munjong a 'guest star' as large as a melon was seen at the south of the *Tung-Pi* (14th lunar mansion)." (*Koryô-sa* ch. 47.)

(385) 17th November, 1075. "On an *i-wei* day in the tenth month of the eighth year of the Hsi-Ning reign-period a star appeared in the SE at the longitudes of the *Chen* (28th lunar mansion) looking like Saturn and had a bluish-white colour. On a *ping-shen* day [18th November] it grew a ray in the NW measuring 3 ft and pointing obliquely at the *Chen* (28th lunar mansion) looking like a (*hui*) comet. On a *ting-yu* day [19th November] the ray measured 5 ft and on a *wu-hsü* day [20th November] it measured 7 ft pointing obliquely towards *Tso-Hsia*. On a *ting-wei* day [29th November] it entered the horizon and went out of sight." (SS 56/23a; WHTK 286/28a; HTCKM 7/40b; W250.)

The Korean says, "On a *ping-shen* day in the tenth month of the 29th year of Munjong [18th November] a (*hui*) comet measuring over 7 ft appeared at the *Chen* (28th lunar mansion)." (*Koryô-sa* ch. 47.)

The Japanese records, "On the ninth day in the tenth month of the second year of the Shôhō reign-period [19th November] a (*hui*) comet appeared and lasted five days." (*Dainihonshi* ch. 359; K.)

(386) 6th January, 1080. "On a *ping-wu* day in the twelfth month of the fifth year of the Ta-Khang reign-period a (*hui*) comet trespassed against the *Wei* (6th lunar mansion)." (*Liao Shih* 24/2a; HWHTK 212/58a; W273; Hsi.)

(387) 10th August, 1080. "On a *kuei-wei* day in the seventh month of the third year of the Yuan-Fêng reign-period a (*hui*) comet appeared at the NW south of *Lang-Wei* in the *Thai-Wei* Enclosure. Its white vapour measured 10 ft and pointed obliquely to the SE at the longitudes of the *Chen* (28th lunar mansion). On a *ping-hsü* day [13th August] it moved NW and was found within the longitudes of the *I* (27th lunar mansion). On a *wu-tzu* day [15th August] it measured 3 ft and penetrated *Lang-Wei* obliquely. On a *kuei-mao* day [not possible, probably *kuei-ssu* day, i.e., 20th August] it trespassed against *Hsien-Yuan*. On a *ting-yu* day [24th August] it entered the horizon and went out of sight. On a *kêng-tzu* day [27th August] the comet re-appeared in the morning at the longitudes of the *Chang* (26th lunar mansion). It finally disappeared on a *wu-tzu* day [not possible, probably *wu-wu* day, i.e., 14th October] after a total of 36 days." (SS 56/23a; WHTK 286/28a; HTCKM 7/64b; W251.)

(388) 31st March, 1090. The Japanese records, "On the 28th day in the second month of the fourth year of the Kwanji reign-period two 'strange stars' one in the SE and one in the SW were seen." (*Dainihonshi* ch. 359; K.)

(389) 8th January, 1092. "On a *hsin-hai* day in the 11th month of the sixth year of the Yuan-Yu reign-period a 'guest star' appeared from the longitudes of the *Shen* (21st lunar mansion) trespassing against and then concealed the stars at its sides. On a *jen-tzu* day [9th January] it trespassed against the stars of *Chiu-Yu*. On a *kuei-yu* day in the 11th month [30th January] it entered the *Khuei* (15th lunar mansion). It went out of sight on a *hsin-hai* day in the third month of the seventh year (7th May)." (SS 56/25a; WHTK 294/12a; B(1).)

(390) 6th October, 1097. "On a *chi-yu* day in the eighth month of the fourth year of the Shao-Shêng reign-period a (*hui*) comet appeared at the longitudes of the *Ti* (third lunar mansion) looking like Saturn. It was bright and white in colour. The vapour measured 3 ft pointing obliquely at the left star of the *Thien-Shih* (Enclosure). On a *jen-tzu* day in the ninth month [9th October] the rays measured 5 ft and the comet entered the *Thien-Shih* Enclosure. On a *chi-wei* day [16th October] it trespassed against *Huan-Chê* in the *Thien-Shih* Enclosure. On a *kêng-shen* day [17th October] it trespassed against *Ti-Tso* in the *Thien-Shih* Enclosure. On a *wu-chên* day [25th October] it went out of sight." (SS 56/23a; WHTK 286/28b; HTCKM 8/73b; W252.)

The *Liao Shih* says, "On an *i-ssu* day in the eighth month of the third year of the Shou-Lung reign-period [2nd October] a (*hui*) comet appeared in the W." (*Liao Shih* 26/3a; HWHTK 212/58a; W274.)

Williams gives "in the tenth month" and hence his date 6th December, 1097.

The Korean says, "On a *ting-wei* day in the eighth month of the second year of Sukjong [4th October] a (*hui*) comet was seen between the *Ti* and the *Fang* (third and fourth lunar mansions) with its rays shooting out towards the *Thien-Shih* Enclosure." (*Koryô-sa* ch. 47.)

The Japanese records, "On the first day in the ninth month of the first year of the Shôtoku reign-period [8th October] a (*hui*) comet appeared at the W with its vaporic rays extending to the *Thien-Shih* Enclosure and measuring about 10 ft. It was white. It moved eastward the whole night and entered the *Thien-Shih* Enclosure pointing E. On the sixth day of the same month [13th October] it moved northward and appeared north of the *Thien-Shih* Enclosure measuring 70 to 80 ft. Its light became dimmer and then became concealed by clouds. On the eighteenth day [25th October] the comet went out of sight." (*Dainihonshi* ch. 359; K.)

(391) 10th February, 1106. "On a *wu-hsü* day in the first month of the fifth year of the Chhung-Ning reign-period a (*hui*) comet appeared at the W. It was of the size of the mouth of a cup. Its rays scattered in all directions as if they were broken up into fragments. The comet measured 60 ft in length and 3 ft in width and was pointing obliquely towards the NE. From the *Khuei* (15th lunar mansion) it penetrated the *Lou*, the *Wei*, the *Mao* and the *Pi* (16th, 17th, 18th and 19th lunar mansions). It then entered the horizon and went out of sight." (SS 56/23b; WHTK 286/28b; HTCKM 9/53a; W253.)

The Korean says, "On a *ting-yu* day in the first month of the first year of Yejong [9th February] a (*hui*) comet about 10 ft long appeared in the SW and lasted over a month before going out of sight." (*Koryô-sa* ch. 47.)

The Japanese records, "On the fourth day in the first month of the first year of the Kashō reign-period [9th February] a (*hui*) comet appeared in the SW with its rays pointing E and trespassed against the space between *Thien-Tshang* and *Thien-Yuan*. It was white and measured about 100 ft. On the sixth day [11th February] its brightness gradually diminished and it measured about 10 ft. On the seventh day [12th February] it moved eastward and measured about 3 to 4 ft. On the fifteenth day [20th February] it again moved eastward measuring 20 ft. It went out of sight after more than 30 days." (*Dainihonshi* ch. 359; K.)

(392) 14th December, 1106. The Korean says, "On a *chi-ssu* day [probably *i-ssu*] in the 11th month of the first year of Yejong a (*hui*) comet was observed." (*Koryŏ-sa* ch. 47.)

(393) 29th May, 1110. "On a *ting-wei* day in the fifth month of the fourth year of the Ta-Kuan reign-period a (*hui*) comet appeared at the *Khuei* and the *Lou* (15th and 16th lunar mansions), with rays measuring 6 ft (*chhih*). It moved northward to enter the *Tzu-Wei* Enclosure. It then entered the horizon and went out of sight in the NW." (SS 56/23b; WHTK 286/28b; HTCKM 9/79b; W254.)

The Korean says, "On a *chi-yu* day in the fifth month of the fifth year of Yejong [31st May] a (*hui*) comet entered the *Tzu-Wei* (Enclosure). On an *i-mao* day [6th June] it appeared at the second watch of the night between *Thien-Chiang-Chün* and *Ko-Tao* and went out of sight in the morning. On a *ting-ssu* night [8th June] it appeared at (*Fu*-)*Lu* and *Tshê-Hsing*. On a *wu-wu* night [9th June] it was seen at the SW of *Wang-Liang*. On a *chi-wei* night [10th June] it appeared between (*Hua*-)*Kai* and *Chhuan-Shê*. On a *kêng-shen* night [12th June] it was below *Hua-Kai* but was seen at the north of *Lu-Chia*. On a *kuei-hai* night [14th June] the comet moved into the stars of *Nü-Yü-Kung*." (*Koryŏ-sa* ch. 47.)

The Japanese records, "On the twelfth day in the fifth month of the first year of the Ten-ei reign-period [1st June] a (*hui*) comet measuring 5 ft appeared in the E and lasted more than 20 days before going out of sight." (*Dainihonshi* ch. 359; K.)

(394) 15th August, 1113. The Korean says, "On a *hsin-ssu* day in the seventh month of the eighth year of Yejong a (*po*) comet was seen at the (*Ying*-)*Shih* (13th lunar mansion)." (*Koryŏ-sa* ch. 47.)

(395) 11th August, 1123. The Korean says, "On a *chi-ssu* day in the seventh month of the first year of Injong a (*po*) comet was seen at *Pei-Tou*." (*Koryŏ-sa* ch. 47.)

(396) 19th July, 1126. "On a *jen-hsü* day in the sixth month of the first year of the Ching-Khang reign-period a (*hui*) comet was seen at the *Tzu-Wei* Enclosure." (SS 56/23b; WHTK 286/29a; HTCKM 11/38b; W255.)

Williams gives 20th May.

The Japanese records, "On the first day in the seventh month of the first year of the Taiji reign-period [22nd July] a (*hui*) comet measuring about 3 ft was seen in the N." (*Dainihonshi* ch. 359; K.)

(397) 8th January, 1127. "On an *i-mao* day in the intercalary 11th month of the first year of the Ching-Khang reign-period a white vapour rose at night from the *Thai-Wei* Enclosure and a (*hui*) comet also appeared." (SS 23/17a.)

The WHTK says, "During the intercalary 11th month of the first year of the Ching-Khang reign-period [16th December, 1126 to 14th January, 1127] a (*hui*) comet extended across the whole sky." (WHTK 286/29a; HTCKM 11/62b; W256.)

(398) 30th December, 1130. The Korean says, "On a *ting-mao* day in the 11th month of the eighth year of Injong a vapour like a (*hui*) comet and measuring about 6 ft was seen between *Wu-Chhê* and *Pa-Ku*." (*Koryŏ-sa* ch. 47.)

(399) September–October, 1131. "During the ninth month of the first year of the Shao-Hsing reign-period (23rd September to 22nd October) a (*hui*) comet was seen." (SS 56/23b; WHTK 286/29a; HTCKM 13/10b; W257.)

In the *Chronicle* of the *Sung Shih* and the WHTK it is described as a (*chhang-hsing*) comet. (SS 26/20a.)

(400) 5th January, 1132. "On a *wu-yin* day in the twelfth month of the first year of the Shao-Hsing reign-period a (*hui*) comet was seen." (SS 56/23b; WHTK 286/29a; W258.)

(401) 7th October, 1132. "On a *chia-yin* day in the eighth month of the second year of the Shao-Hsing reign-period a (*hui*) comet was seen at the *Wei* (17th lunar mansion). On a *ping-chhen* day [9th October] it moved and trespassed against *Thu-Ssu-Khung*. On a *chia-hsü* day in the ninth month [27th October] it went out of sight." (SS 56/23b; WHTK 286/29a; HTCKM 13/26a; W259.)

Williams gives 14th August.

The *Chin Shih* says, "On a *hsin-hai* day in the eighth month of the tenth year of the Thien-Hui reign-period [4th October] a (*hui*) comet appeared at *Wên-Chhang*." (*Chin Shih* 20/6a; HWHTK 212/58a; W275.)

Williams gives the date as 9th September, 1133.

The Korean says, "On a *jen-tzu* day in the eighth month of the tenth year of Injong [5th October] a (*hui*) comet appeared at *Pa-Ku* pointing SE. On a *chia-yin* day [7th October] it measured 3 ft and was pointing NW." (*Koryô-sa* ch. 47.)

The Japanese records, "On the 25th day in the eighth month of the first year of the Chôshô reign-period [5th October] a white (*hui*) comet was seen pointing W and situated at the longitudes of the *Tsui* (20th lunar mansion) trespassing against the *Chen* (28th lunar mansion). On the 27th day [7th October] it was seen at the NE near the third star of the *Lou* (16th lunar mansion), measuring over 30 ft and with intense rays pointing NW. On the 28th day [8th October] it moved south and reached the *Khuei* (15th lunar mansion), but its rays had become fainter and diminished to just over 10 ft. On the 29th day [9th October] it moved further south and came in line with *Thu-Ssu-Khung* measuring 2 to 3 ft. On the last day of the month [10th October] and on the first day of the following month [11th October] it was not seen due to the presence of dark clouds. It went out of sight on the second day [12th October]." (*Dainihonshi* ch. 359; K.)

(402) June-July, 1138. "During the fifth month of the eighth year of the Shao-Hsing reign-period [9th June to 8th July] a 'guest star' was guarding the *Lou* (16th lunar mansion)." (SS 56/25a; WHTK 294/12b; B(1); L; Hsi.)

(403) 3rd September, 1138. "On a *hsin-hai* day in the seventh month of the eighth year of the Shao-Hsing reign-period a (*hui*) comet was observed in the E. It went out of sight on a *ting-chhou* day [29th September]." (SS 29/3a; HTCKM 14/7a.)

The Japanese records, "On the 20th day in the seventh month of the fourth year of the Hôen reign-period [27th August] a (*hui*) comet appeared in the NW measuring 5 to 6 ft. It was white and it remained a few days before going out of sight." (*Dainihonshi* ch. 359; K.)

(404) 23rd March, 1139. "On a *jen-shen* day in the second month of the ninth year of the Shao-Hsing reign-period a 'guest star' guarded the *Khang* (second lunar mansion)." (SS 56/23b; WHTK 294/12b; B(1); L; Hsi.)

The WHTK and Biot give only the year.

(405) August, 1144. The Japanese records, "During the seventh month of the first year of the Ten-yô reign-period [1st August to 30th August] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(406) 26th April, 1145. "On a *wu-yin* day in the fourth month of the 15th year of the Shao-Hsing reign-period a (*hui*) comet was seen in the E. On a *ping-shen* day [3rd June] it again appeared within the longitudes of the *Shen* (21st lunar mansion). On a *ting-su* day in the fifth month [4th June] it transformed itself into a 'guest star'. Its colour was bluish-white. On a *jen-hsü* day [14th June] it stayed by the side and guarded the *Chang* (26th lunar mansion). On a *ting-wei* day in the sixth month [9th July] it went out of sight." (SS 56/23b; WHTK 286/29a; HTCKM 14/82b; W260 and W261.)

The *Chin Shih* says, "On a *ping-shen* day in the fourth month of the fifth year of the Huang-Thung reign-period [14th May] a (*hui*) comet over 10 ft long appeared at the NW. It went out of sight on a *jen-hsü* day in the fifth month [14th June]." (*Chin Shih* 20/6b; HWHTK 212/58a.).

CHU WEN-HSIN (1933) suggests that this was Halley's comet; cf. SCHOVE (1955).

The Korean says, "On a *ping-shen* day in the fourth month of the 23rd year of Injong [14th May] a (*hui*) comet measuring over 10 ft was observed for 15 days at the NW." (*Koryŏ-sa* ch. 47.)

The Japanese records, "On the fifth day in the fourth month of the first year of the Kyūan reign-period [28th April] a white (*hui*) comet measuring over 10 ft appeared at the E and trespassed against the *Khuei* (15th lunar mansion). On the 16th day [9th May] its rays measured about 20 ft pointing towards the W. On the 20th day [13th May] it was not seen. On the 23rd day [16th May] it reappeared at the W and measured about 5 ft pointing E. On the 24th day [17th May] it measured about 20 ft." (*Dainihonshi* ch. 359; K.)

(407) 29th December, 1146. "On a *kêng-yin* day in the 11th month of the 16th year of the Shao-Hsing reign-period a (*hui*) comet appeared at the SW at the *Wei* (12th lunar mansion)." (SS 56/23b; WHTK 286/29a; W262.)

The WHTK gives the date as "*wu-hsü* day in the twelfth month". Williams quotes from the WHTK and hence his date "6th January, 1147".

The Japanese records, "On the first day in the twelfth month of the second year of the Kyūan reign-period [4th January, 1147] a (*hui*) comet about 20 or 30 ft long appeared at the W. On the third day (6th January) it was seen between the *Wei* and the (*Ying*-) *Shih* (12th and 13th lunar mansions) measuring about 10 ft. On the sixth day [9th January] it appeared at the SW measuring about 100 ft. It gradually faded away after more than ten days." (*Dainihonshi* ch. 359; K.)

(408) 8th February, 1147. "On a *hsin-wei* day in the first month of the seventh year of the Huang-Thung reign-period a (*hui*) comet over 10 ft long was seen at the E. It lasted 15 days before it vanished." (*Chin Shih* 20/7a; WHTK 286/29b; HWHTK 212/58b; W263.)

The WHTK says that the comet appeared on an *i-hai* day [12th February] at the NE (among the) *Hsü-Nü* (tenth lunar mansion), Williams quotes from the WHTK. The HWHTK gives "the seventh month."

The Japanese records, "On the eighth day in the first month of the third year of the Kyūan reign-period [9th February] a (*po*) comet was observed. On the 12th day [13th February] [it became a *hui* comet and] appeared at the E between the *Hsü-Nü* and the *Hsü* (tenth and 11th lunar mansions) with rays measuring 10 ft and approaching *Hu-Kua*. On the 13th day [14th February] it moved gradually northward and on the 24th day [25th February] it faded away." (*Dainihonshi* ch. 359; K.)

(409) 25th July, 1156. "On a *ping-wu* day in the seventh month of the 26th year of the Shao-Hsing reign-period a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) measuring about 10 ft. Its rays extended two feet. On a *kuai-chhou* day [1st August] it trespassed against *Wu-Chu-Hou*." (SS 56/24a; WHTK 286/29b; HTCKM 15/37a; W264.)

A misprint in the WHTK gives "22nd year" for "26th year". Williams copies the mistake and gives the date as "21st August, 1151".

The Japanese records, "On the fifth day in the seventh month of the first year of the Hōgen reign-period [23rd July] a (*hui*) comet appeared at the E. On the 11th day [19th July] it measured about 6 ft and was of a white colour. On the 12th day [30th July] it moved in a NE direction. On the 15th day [4th August] it trespassed against *Wu-Chu-Hou* and *San-Kung*." (*Dainihonshi* ch. 359; K.)

The Korean says, "On a *ping-yin* day in the seventh month of the tenth year of Ŭijong [14th August] a (*hui*) comet appeared at the E. It did not get out of sight until on a *ting-chhou* day in the eighth month (25th August)." (*Koryŏ-sa* ch. 47.)

(410) 22nd July, 1161. "On a *chi-ssu* day in the sixth month of the 31st year of the Shao-Hsing reign-period a (*hui*) comet appeared at the NE of Thien-Chuan [ $\delta$  Ursae Majoris] in *Pei-Tou*. The Astronomer Royal called it a '*Han-Yü*' by mistake." (SS 56/24a.)

(411) 10th August, 1163. The Korean says, "On a *wu-hsü* day in the seventh month of the 17th year of Ŭijong a 'guest star' trespassed against the moon." (*Koryŏ-sa* ch. 47.)

(412) 1st May, 1166. "On a *kuei-yu* day in the third month of the second year of the Chhien-Tao reign-period a 'guest star' appeared within the *Thai-Wei* Enclosure at the west of the large star of *Wu-Ti-Tso*. Its magnitude was small and it was of a bluish-white colour." (SS 56/25b.)

The possibility of this being a nova is ruled out by the Japanese record which says, "On the 22nd day in the third month of the first year of the Nin-an reign-period [23rd April] a (*hui*) comet appeared within the *Yu-I-Mên* of the *Thai-Wei* (Enclosure). It left from the west of *Phing(-Hsing)* and penetrated *Yu-Chih-Fa*. It measured 3 ft and was of a white colour. After 20 days it went out of sight." (*Dainihonshi* ch. 359; K.)

The Japanese also records, "On the 22nd day in the fourth month of the first year of the Nin-an reign-period [23rd May] a 'guest star' appeared at the *Thai-Wei* Enclosure." (*Dainihonshi* ch. 359; K.)

(413) 10th August, 1175. "On a *hsin-chhou* day in the seventh month of the second year of the Chhun-Hsi reign-period a (*po*) comet appeared at the NW outside the *Tzu-Wei* Enclosure and above *Chhi-Kung*. It was as small as Mars, but rays radiated out copiously in all directions. On a *ping-wu* day [15th August] it went out of sight." (SS 56/24a; WHTK 286/29b; Hsi.)

(414) 14th January, 1178. The Japanese records, "On the 24th day in the 12th month of the first year of the Jishō reign-period a (*hui*) comet appeared at the SE. On the 28th day [18th January] its rays became more intense." (*Dainihonshi* ch. 359; K.)

The Japanese record continues, "On the seventh day in the first month of the second year of the Jishō reign-period [27th January] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(415) 6th August, 1181. "On a *chi-szu* day in the sixth month of the eighth year of the Chhun-Hsi reign-period a 'guest star' appeared at the *Khuei* (15th lunar mansion) and trespassed against the stars of *Chhuan-Shê*. It went out of sight on a *kuei-yu* day in the first month of the following year, lasting 185 days." (SS 56/25b; WHTK 294/12b; B(1); Hsi.)

The *Chin Shih* says, "On a *chia-hsü* day in the sixth month of the 21st year of the Ta-Ting reign-period [11th August] a 'guest star' appeared at *Hua-kai* for a period of 156 days before going out of sight." (*Chin Shih* 20/12a; HWHTK 215/31b.)

The Japanese records, "On the 25th day in the sixth month of the first year of the Yōwa reign-period [7th August] a 'guest star' appeared at the N near *Wang-Liang* and guarding *Chhuan-Shê*." (*Dainihonshi* ch. 359; K.)

(416) 2nd February, 1185. The Japanese records, "On the first day in the first month of the fourth year of the Juei reign-period a *Chhih-Yu* banner (comet) measuring over 10 ft was seen at the SE." (*Dainihonshi* ch. 359; K.)

(417) 16th March, 1189. The Japanese records, "On the 28th day in the second month of the fifth year of the Bunji reign-period a (*hui*) comet appeared at the E north of the *Thai-Wei* Enclosure and by the side of *Lang-Wei*. It was over 10 ft long and reddish-white in colour." (*Dainihonshi* ch. 359; K.)

(418) March, 1202. The Japanese records, "During the second month of the second year of the Kennin reign-period [24th February to 25th March] a (*hui*) comet appeared." (*Dainihonshi* ch. 359; K.)

Kanda gives 1st March.

(419) 28th July, 1203. "On an *i-mao* day in the sixth month of the third year of the Chia-Thai reign-period a 'guest star' appeared at the SE within the *Wei* (sixth lunar mansion). It was bluish-white in colour and was of the same size as Saturn. On a *chia-tzu* day [6th August] it guarded the *Wei* (sixth lunar mansion)." (SS 56/25b; WHTK 294/13a; B(1); L; Hsi.)

This is said to be a nova near NGC 4673, and Wolf-Rayet Star -4°10919.



(420) *February–March*, 1210. “During the second month of the second year of the Ta-An reign-period of Shao-Wei-Wang [26th February to 26th March] a ‘guest star’ entered the *Tzu-Wei* (Enclosure). Its rays spread out like a red dragon.” (*Chin Shih* 20/15b; HWHTK 215/31b.)

(421) *19th October*, 1210. The Japanese records, “On the last day of the ninth month of the fourth year of the Shōgen reign-period a (*hui*) comet appeared at the west near the third star of the *Thien-Shih* (Enclosure), pointing E and measuring over 10 ft. It was seen throughout the night. On the 11th day in the 11th month [28th November] it was seen again.” (*Dainihonshi* ch. 359; K.)

(422) *25th January*, 1220. The Japanese records, “On the 18th day in the 12th month of the first year of the Shōkhu reign-period a (*hui*) comet appeared at the NW at a distance of 1 ft to the east of *Thêng-Shê*. It was red in colour.” (*Dainihonshi* ch. 359; K.)

(423) *6th February*, 1220. The Korean says, “On a *jen-chhen* day in the first month of the seventh year of Kojong a (*hui*) comet appeared at *Kou-Hsing*. Its tail measured about 3 ft and was pointing NW. On a *ping-tzu* day in the second month [21st March] a (*po*) comet appeared at *Hsien-Yuan*.” (*Koryŏ-sa* ch. 47.)

(424) *January*, 1221. The Korean says, “During the 12th month of the seventh year of Kojong [27th December, 1220 to 24th January, 1221] a (*po*) comet appeared at *Pei-Tou*.” (*Koryŏ-sa* ch. 47.)

(425) *10th September*, 1222. “On a *chi-mao* day in the eighth month of the sixth year of the Hsing-Ting reign-period a comet appeared among the *Chio* and the *Khang* (first and second lunar mansion), *Yu-Shê-Thi* and *Chou-Ting* pointing towards *Ta-Chio* (Arcturus).” (*Chin Shih* 20/17b; HWHTK 212/58b; W276.)

The HWHTK says that it went out of sight on a *ting-wei* day in the ninth month [8th October]. Williams gives the date as 13th September, 1226.

The account is continued in the *Sung Shih* which says, “On a *chia-wu* day in the eighth month of the 15th year of the Chia-Ting reign-period [25th September] a (*hui*) comet appeared at *Yu-Shê-Thi*. Its rays measured 3 ft [the WHTK says 30 ft] and its structure looked like Jupiter. It lasted two months and disappeared after passing the *Ti*, the *Fang* and the *Hsin* (third, fourth and fifth lunar mansions). The comet went out of sight on a *jen-hsü* day in the ninth month [23rd October].” (SS 56/24a; WHTK 286/30a; HTCKM 18/78b; W265.)

Williams gives the date as 15th September.

This has been regarded by Crommelin as Halley’s comet; cf. CHU (1933).

The Korean says, “On a *jen-shen* day in the seventh month of the ninth year of Kojong [3rd September] a comet appeared within *San-Thai*, with its tail pointing W and measuring about 3 ft. On a *ting-chhou* day in the eighth month [8th September] it appeared at the NW measuring about 20 ft. On a *wu-yin* day [9th September] it was seen in the day.” (*Koryŏ-sa* ch. 47.)

The Japanese records, “On the first day in the eighth month of the first year of the Tei-ō reign-period [7th September] a (*hui*) comet appeared at the NW. On the eighth day [14th September] it was seen at the W instead.” (*Dainihonshi* ch. 359; K.)

(426) *28th August*, 1223. The Japanese records, “On the first day in the eighth month of the second year of the Tei-ō reign-period a (*hui*) comet with a white colour appeared at the NW. On the second day [29th August] its rays and brightness became intensified, while its length had increased to about 20 ft.” (*Dainihonshi* ch. 359.)

(427) *11th July*, 1224. “On a *chi-chhou* day in the sixth month of the 17th year of the Chia-Ting reign-period a ‘guest star’ guarded and trespassed against the *Wei* (sixth lunar mansion).” (SS 56/25b; HWHTK 215/31b; Hsi.)

Hsi gives the wrong date.

(428) *15th December*, 1230. “On a *ting-yu* day in the 11th month of the third year of the Shao-Ting reign-period a (*hui*) comet appeared below *Thu-Ssu* in the *Thien-Shih* (Enclosure).

It went out of sight on a *jen-wu* day in the second month of the following year [30th March, 1231]." (SS 56/24a; HWHTK 212/56b; B(1); L; Hsi.)

This has been generally regarded as a nova, but was evidently a comet from the following account in the *Chih-Shih*: "On a *kêng-yin* day in the 12th month of the seventh year of the Chêng-Ta reign-period [8th December, 1230] a star appeared from below *Thien-Chin*. It was as large as Saturn, but not bright. In the beginning it trespassed against *Lien-Tao*. On the second day it appeared at the NE to the south of *Chih-Nü* (Vega). On an *i-wei* day [13th December] it entered the *Thien-Shih* Enclosure and left on a *wu-shen* day [26th December]. On a *kuei-chhou* day [31st December] it passed the *Fang* (fourth lunar mansion) and again moved in a SE direction. It entered *Chi-Hsin* and went out of sight after 25 days." (*Chih Shih* 20/18a.)

The Japanese records, "On the 28th day in the tenth month of the second year of the Kwanki reign-period [4th December, 1230] a 'guest star' appeared in the W. On the last day of the month [5th December] it appeared at the east of *Chih-Nü* [Vega], north-east of *Thien-Chin* and by the side of *Hsi-Chung*. Until the eighth day in the eleventh month [13th December] it was seen in the evening at the west and in the morning at the north-east." (*Dainihonshi* ch. 359; K.)

(429) 17th October, 1232. "On a *chi-yu* day in the intercalary ninth month of the first year of the Thien-Hsing reign-period a (*hui*) comet appeared in the E. It was white in colour, measuring over 10 ft and was bent like an elephant's tusk. It came from the *Chio* and the *Chen* (first and 28th lunar mansions) and moved southward until the 12th day [27th October] when it measured 20 ft (2 *chang*). On the 16th day [31st October] it was not seen under the bright moonlight. Between 03:00 and 05:00 hours on the 27th day [11th November] it again appeared in the SE and measured over 40 ft. This lasted until the first day of the tenth month [should read '11th month', i.e., 14th December] after having appeared for a total of 48 days." (*Chin Shih* 20/18b; SS 56/24a; HTCKM 19/55a; HWHTK 212/59a; W277 and W266; B(1); Hsi.)

W277 gives the date as "21st September, 1237".

The SS and the HWHTK both give a very brief account, which is quoted by Williams in W266. In W266 Williams also overlooks the leap year and gives the date as 18th October.

The Japanese records, "On the eighth day in the intercalary ninth month of the first year of the Tei-ei reign-period [23rd October, 1232] a white (*hui*) comet over 20 ft long appeared in the E." (*Dainihonshi* ch. 359; K.)

Kanda says between 19th October and 18th November.

(430) 30th October, 1234. The Japanese records, "On the seventh day in the tenth month of the first year of the Bunryaku reign-period a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(431) January–February, 1239. Kanda mentions the observation of an "ominous star" within this period. (K.)

(432) 31st January, 1240. "On a *hsin-wei* day in the first month of the fourth year of the Chia-Hsi reign-period a (*hui*) comet was seen at the (*Ying*)-*Shih* (13th lunar mansion). On a *hsin-wei* day in the third month [31st March] it went out of sight." (SS 56/24a; HTCKM 20/38b; HWHTK 212/56b; W267; Hsi.)

Hsi gives the wrong date.

The HWHTK adds, "On a *chia-wu* day [23rd February] the comet trespassed against the second star in the south-west of *Wang-Liang*." (W268.)

The Japanese records, "On the second day in the first month of the first year of the Ninji reign-period [27th January, 1240] a (*hui*) comet appeared at the SW, measuring 3 ft, pointing SE and was of a reddish-white colour. On the fourth day [29th January] it again appeared and was of the same size as Saturn, with its rays extending up to 4 ft. On the fourth and fifth days [30th January and 31st January] it was not seen due to cloudy conditions. On the seventh day [1st February] it was seen by the side of Jupiter and was of the same size as Venus: its rays measured 5 ft and pointed towards the NE. On the eighth day [2nd February] it was facing Jupiter and was seen throughout the night. On the 11th day [5th February] it trespassed against the first star of the (*Tung*)-*Pi* (14th lunar mansion). On the 18th day [12th February] the comet approached the *Khuei* (15th lunar mansion) and entered it on the 19th day [13th February].

On the 27th day of the month [21st February] its rays were still faintly visible." (*Dainihonshi* ch. 359; K.)

(433) 17th August, 1240. "On a *kéng-yin* day in the seventh month of the fourth year of the Chia-Hsi reign-period a 'guest star' appeared at the *Wei* (sixth lunar mansion)." (SS 56/25b; HWHTK 215/31b; Hsi.)

(434) 17th February, 1241. The Japanese records, "On the fifth day in the first month of the second year of the Ninji reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359.)

(435) 24th February, 1245. The Japanese records, "On the 26th day in the first month of the third year of the Kwangen reign period a 'guest star' was seen at the SE. On the 27th day [25th February] it appeared at the SE of the *Thien-Shih* Enclosure within the longitudes of the (*Nan*-)*Tou* (eighth lunar mansion). On the 28th day [26th February] it appeared at the south of the (*Chhien*-)*Niu* (ninth lunar mansion). On the 29th day [27th February] it was not seen because of dark clouds. On the first day in the second month [28th February] it appeared within the longitudes of the *Chhien-Niu* (ninth lunar mansion) looking like loose cotton." (*Dainihonshi* ch. 359; K.) The record continues, "On the first day in the third month of the third year of the Kwangen reign-period [30th March, 1245] a (*hui*) comet was observed between the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (13th and 14th lunar mansions). It measured 2 ft and went out of sight on the sixth day [4th April]." (*Dainihonshi* ch. 359; K.)

(436) 26th July, 1264. "On a *chia-hsü* day in the seventh month of the fifth year of the Ching-Ting reign-period a (*hui*) comet was seen at the *Liu* (24th lunar mansion). Its rays illuminated the heavens and measured over 100 ft. It became invisible only when the sun was high up. This lasted for more than one month. On a *chi-mao* day [31st July] it receded and appeared at the *Yü-Kuei* (23rd lunar mansion). On a *hsin-ssu* day [2nd August] it appeared at the (*Tung*-)*Ching* (22nd lunar mansion). On a *ping-shen* day [17th August] it appeared within the longitudes of the *Shen* (21st lunar mansion). Towards the end of the eighth month [23rd August to 21st September] the rays slightly decreased. It lasted four months before it finally went out of sight." (SS 56/24a; HTCKM 21/43b; HWHTK 212/56b; W269.)

The *Yuan Shih* renders a briefer account: "On a *chia-hsü* day in the seventh month of the first year of the Chih-Yuan reign-period [26th July] a comet appeared from the *Yü-Kuei* (23rd lunar mansion) in the evening at the NW. It penetrated *Shang-Thai* and swept the *Tzu-Wei* (Enclosure), *Wên-Chhang* and *Pei-Tou*. In the morning it was seen at the NE. This lasted more than 40 days." (YS 48/17b; HWHTK 212/59a; W278.)

The Korean says, "On a *chia-hsü* day in the seventh month of the fifth year of Wŏnjong [26th July] a comet was observed at the NE. Its tail, which measured 7 to 8 ft, gradually divided itself into five branches pointing towards the NW. On a *jen-yin* day in the eighth month [23rd August] the branches reunited and the tail increased in length. On a *jen-hsü* day [12th September] the rays became still longer and extended across the heavens. The comet went out of sight on an *i-yu* day in the ninth month [5th October]." (*Koryŏ-sa* ch. 47.)

The Japanese records, "On the 26th day in the sixth month of the first year of the Bun-ei reign-period [21st July] a comet appeared at the NW. The same observation was made on the 27th day [22nd July]. On the fourth day in the seventh month [28th July] it appeared at the E measuring about 3 ft. On the seventh day [31st July] its rays extended across the heavens. From then on it made its appearance intermittently until it finally went out of sight on the 27th day (10th October)." (*Dainihonshi* ch. 359; K.)

(437) 17th January, 1266. The Japanese records, "On the tenth day in the 12th month of the second year of the Bun-ei reign-period a (*hui*) comet appeared in the E. It lasted until the first month of the following year [7th February to 8th March]." (*Dainihonshi* ch. 359; K.)

(438) 27th August, 1268. The Japanese records, "On the 18th day in the seventh month of the fifth year of the Bun-ei reign-period a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.) Kanda gives 13th August.

(439) 9th April, 1273. "On a *kuei-yu* day in the third month of the tenth year of the Chih-Yuan reign-period a 'guest star' with a bluish-white colour and the appearance of loose cotton was seen within the longitudes of the *Pi* (19th lunar mansion) and to the north of *Wu-Chhê*. Moving from *Wên-Chhang* it penetrated the 'ladle' of *Pei-Tou*, passed *Kêng-Ho* and reached *Tso-Shê-Thi*. It lasted 21 days." (YS 48/18a; HWHTK 215/32a.)

The Korean says, "On a *jen-wu* day in the first month of the 14th year of Wǒnjong [17th February, 1273] a (*hui*) comet was seen." (*Koryô-sa* ch. 47.)

The Japanese records, "On the 16th day in the first month of the tenth year of the Bun-ei reign-period [5th February, 1273] a (*hui*) comet was seen. On the 22nd day in the third month [11th April] a 'guest star' appeared." (*Dainihonshi* ch. 359; K.)

Kanda also adds that a comet was seen at the W at 19.00 to 21.00 hr on 17th October of the same year.

(440) 9th March, 1277. "On a *kuei-hai* day in the second month of the 14th year of the Chih-Yuan reign-period a (*hui*) comet appeared from the NE measuring over 4 ft." (YS 48/18b; HWHTK 212/59a; W279.)

The Korean says, "On a *ping-hsü* day in the second month of the third year of Ch'ungnyöl Wang [1st April, 1277] a (*Chhiih-Yu* banner) comet was seen." (*Koryô-sa* ch. 47.)

Kanda mentions the appearance of a 3 ft long comet on 8th March, 1277. (K.)

(441) 7th November, 1293. "On a *kêng-yin* day in the tenth month of the 30th year of the Chih-Yuan reign-period a (*hui*) comet entered the *Tzu-Wei* Enclosure and reached the 'box' of *Pei-Tou*. Its rays measured over 1 ft in length. After one month it went out of sight." (YS 48/23b; HTCKM 23/78a; HWHTK 212/59b; B(1); W280.)

The Korean says, "On a *chia-chhen* day in the tenth month of the 19th year of Ch'ungnyöl Wang [21st November, 1293] a (*hui*) comet was seen at the E. On a *wu-shen* day [25th November] the comet appeared at the *Tso-I-Mên* [space between *Zavijava* and *Porrina*] measuring about 1.5 ft. On a *ping-tzu* day [23rd December] the comet trespassed against the *Tzu-Wei* (Enclosure) and *Pei-Tou*." (*Koryô-sa* ch. 47.)

The Japanese records, "On the 29th day in the tenth month of the first year of the Einin reign-period [28th November, 1293] a (*hui*) comet was observed." (*Dainihonshi* ch. 359; K.)

(442) 12th March, 1297. The Korean says, "On a *hsin-hai* day in the second month of the 23rd year of Ch'ungnyöl Wang a (*hui*) comet appeared at the *Tung-Ching* [22nd lunar mansion] lasting six days. On a *chia-tzu* day in the third month [25th March] the comet again appeared at the *Tung-Ching* (22nd lunar mansion)." (*Koryô-sa* ch. 47.)

Kanda mentions that a 6 ft long comet appeared in the W at 19.00 to 21.00 hr on 13th March, 1297. (K.)

(443) 14th September, 1297. "On a *ting-ssu* day in the eighth month of the first year of the Ta-Tê reign-period an 'ominous star' appeared at the *Khuei* (15th lunar mansion). On a *hsin-yu* day in the ninth month [18th September] an 'ominous star' again trespassed against the *Khuei* (15th lunar mansion)." (YS 48/25b; HTCKM 24/9a; Hsi.)

Kanda mentions that a 1 ft long white comet was seen in the E at 19.00 to 21.00 hr on 14th September, 1297. (K.)

(444) 24th January, 1299. "On a *chia-hsü* day in the 12th month of the second year of the Ta-Tê reign-period a comet was seen below *Tzu* and *Sun*." (YS 48/26a; HTCKM 24/13a; HWHTK 212/60a; W281; Hsi.)

Williams gives the date as 24th June.

The Korean says, "On a *chia-hsü* day in the 12th month of the 24th year of Ch'ungnyöl Wang [24th January, 1299] a (*hui*) comet was seen at the south." (*Koryô-sa* ch. 47.)

The Japanese records, "During the 12th month of the sixth year of the Einin reign-period [4th January to 1st February] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

Kanda says that the comet was 1 ft 7 in. long and that it was seen in the morning at the south on 6th January, 1299.

(445) 23rd October, 1299. Kanda says that a comet measuring 20 ft in length appeared at 03.00 to 05.00 hr in the ESE $\frac{1}{2}$ S direction. (K.)

(446) 16th September, 1301. "From a *kéng-chhen* day in the eighth month to an *i-chhou* day in the ninth month of the fifth year of the Ta-Tê reign-period [16th September to 31st October] a (*hui*) comet appeared within 24.4 degrees [24 *tu* 40 *fén*] of the (*Tung*-)Ching (22nd lunar mansion) reaching the large star of *Nan-Ho*. It was white in colour and measured 5 ft in length. It formed a straight line in the NW direction. It passed *Wén-Chhang*, entered the 'box' of *Pei-Tou* and swept *Thai-Yang*. By the time it swept *Pei-Tou*, *Thien-Chi*, the *Tzu-Wei* Enclosure, *San-Kung* and *Kuan-So* it was measuring over 10 ft. Then it reached the east of *Pa-Shu* in the *Thien-Shih* Enclosure, went to the south of *Liang* and *Chhu* and above the star *Sung* and was measuring 1 ft before it went out of sight after a total appearance of 46 days." (YS 48/27b; HTCKM 24/21b; HWHTK 212/60a; B; W282.)

CHU WÊN-HSIN (1933) suggests that this was Halley's comet; cf. also SCHOVE (1955).

The Korean says, "On a *wu-yin* day in the eighth month of the 27th year of Ch'ungnyöl Wang [14th September, 1301] a comet appeared at *Pei-Tou* and the *Tzu-Wei* Enclosure. On a *jen-wu* day [18th September] it appeared at *Pei-Tou*. On an *i-wei* day [1st October] it was seen at *Shang-Thai* and then it entered the *Thien-Shih* Enclosure. On a *kuei-mao* day in the ninth month [9th October] it was observed at the *Thien-Shih* Enclosure." (*Koryō-sa* ch. 47.)

(447) 3rd February, 1304. "On an *kéng-hsü* day in the 12th month of the seventh year of the Ta-Tê reign-period an (*hui*) comet was seen. Until an *i-chhou* day in the third month of the eighth year [18th April] it was measuring about 1 ft in length and was pointing SE. It was white in colour and measurements indicated its position at the 11th degree (*tu*) within the (*Ying*-) *Shih* (13th lunar mansion). Its length then gradually increased to over 1 ft. Then it pointed NW and swept *Thêng-Shê*. It entered the *Tzu-Wei* Enclosure and went out of sight after 74 days." (YS 48/29a; HTCKM 24/33b; HWHTK 212/60a; B; W283.)

The Korean says, "On a *kéng-hsü* day in the 12th month of the 29th year of Ch'ungnyöl Wang [3rd February, 1304] a (*hui*) comet was seen in the W. On a *chia-yin* day in the first month of the 30th year [7th February] it was seen at the *Khuei* (15th lunar mansion)." (*Koryō-sa* ch. 47.)

(448) 24th December, 1304. The Korean says, "On an *i-hai* day in the 11th month of the 30th year of Ch'ungnyöl Wang a (*hui*) comet appeared between the *Hsü* and the *Wei* (11th and 12th lunar mansions). On a *wu-yin* day in the 12th month [27th December] it trespassed against the *Hsü* (11th lunar mansion). On a *kéng-chhen* day [29th December] it penetrated the *Hsü* (11th lunar mansion). On a *hsin-ssu* day [30th December] it entered the *Wei* (12th lunar mansion)." (*Koryō-sa* ch. 47.)

(449) 24th August, 1307. The Korean says, "On a *wu-tzu* day in the seventh month of the third year of Ch'ungnyöl Wang a (*hui*) comet appeared at the *Wei* (sixth lunar mansion)." (*Koryō-sa* ch. 47.)

(450) 13th April, 1313. "On a *ting-wei* day in the third month of the second year of the Huang-Chhing reign-period a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion)." (YS 48/33a; HWHTK 212/60b; B; W284; Hsi.)

The Korean says, "On a *ting-wei* day in the third month of the fifth year of Ch'ungson Wang [13th April] a (*hui*) comet was seen at the *Tung-Ching* (22nd lunar mansion)." (*Koryō-sa* ch. 47.)

The Japanese records, "A (*hui*) comet was seen on the 17th day in the third month of the second year of the Shōwa reign-period [13th April]." (*Dainihonshi* ch. 359; K.)

(451) 29th October, 1315. "On a *ping-tzu* day, the first day in the tenth month of the second year of the Yen-Yu reign-period a 'guest star' appeared at the *Thai-Wei* Enclosure. On a *ping-wu* day in the 11th month [28th November] the 'guest star' changed into a (*hui*) comet and trespassed against the *Tzu-Wei* Enclosure. It passed the *Chen* (28th lunar mansion) and reached the (*Tung*-) *Pi* (14th lunar mansions) [after traversing] a total number of 15 lunar mansions.

On a *kêng-yin* day in the second month of the following year [11th March, 1316] it went out of sight." (YS 48/34a; HTCKM 25/11a; HWHTK 212/60b; HWHTK 215/32a; B(1); W285.)

Williams quotes from the HWHTK 212/60b which omits the first part of the account. Hence the date 28th November in Williams' *Catalogue*. In the section on "guest stars" of the HWHTK, however, the full account is given.

(452) 31st May, 1319. The Korean says, "On a *ping-yin* day in the fifth month of the sixth year of Ch'ungsuk Wang a (*hui*) comet measuring over 10 ft moved from the north of *Thien-Chhuan* to *Wang-Liang* and *Ko-Tao*. On a *kêng-wu* day [4th June] it was seen at the NE. On a *kuei-yu* day [7th June] it was again seen at the western wall of the *Tzu-Wei* Enclosure, *Hua-Kai*, *Kou-Chhen* and *Pei-Chi*. On a *kuei-ssu* day (27th June) it was seen at the eastern wall of the *Tzu-Wei* Enclosure. On a *ting-yu* day [1st July] it trespassed against *Kuan-Hsing* (= *Kuan-So*). On a *kêng-tzu* day [4th July] the comet was seen at the *Thien-Shih* Enclosure. After 40 days the comet went out of sight." (*Koryŏ-sa* ch. 47.)

(453) 13th March, 1331. The Korean says, "On a *kêng-hsü* day in the second month of the first year of Ch'unghye Wang a (*hui*) comet was seen at the E entering the *Thai-Wei* Enclosure. On a *chia-yin* day [17th March] it again appeared in the E." (*Koryŏ-sa* ch. 47.)

(454) 4th May, 1337. "On a *chia-hsü* day in the fourth month of the third year of the Chih-Yuan reign-period of Shun-Ti a (*po*) comet appeared at *Wang-Liang*. It went out of sight on a *jen-yin* day in the seventh month [31st July] at *Kuan-So*." (YS 39/8a; HWHTK 212/61b com.; W286.)

(455) 26th June, 1337. "On a *ting-mao* day in the fifth month of the third year of the Chih-Yuan reign-period a (*hui*) comet appeared at the NE moving towards *Thien-Chhuan*. It was a large comet, white in colour and with a linear dimension of about 1 ft or more. The comet pointed SW and observations showed its position at 5 degrees (*tu*) within the *Mao* (18th lunar mansion). On a *kêng-wu* day in the eighth month [28th August] the (*hui*) comet went out of sight. Since the first appearance of this comet on a *ting-mao* day in the fifth month [26th June] first it went SW on a *wu-chhen* day [27th June] increasing its speed daily until a *hsin-wei* day in the sixth month [30th June], by which time the rays had grown to a length of about 3 ft. The comet then entered the *Huan-Wei*. On a *ting-chhou* day [6th July] it swept *Hua-Kai* and *Kang-Hsing*. On an *i-yu* day [14th July] it swept the large star of *Kou-Chhen* and *Thien-Huang-Ta-Ti*. On a *ping-hsü* day [15th July] it penetrated *Ssu-Fu* and passed *Shu-Hsin* (Polaris). On a *chia-wu* day [23rd July] it left *Huan-Wei*. On a *ting-yu* day [26th July] it left the *Tzu-Wei* Enclosure. On a *wu-hsü* day [27th July] it trespassed against *Kuan-So* and swept *Thien-Chi*. On a *kêng-tzu* day in the seventh month [29th July] it swept *Ho-Chien*. On a *kuei-mao* day [1st August] it passed *Chêng* and *Chin* and entered the *Thien-Shih* Enclosure. On a *ping-wu* day [4th August] it swept *Lieh-Ssu*. On a *chi-yu* day [7th August] its rays were barely seen under the brightness of the moon. The comet then left the *Thien-Shih* Enclosure and swept the star *Liang*. On a *hsin-yu* day [19th August] its rays became much weaker, but it could still be observed at the *Fang* (fourth lunar mansion) above *Chien-Pi* and directly to the W of the central star of *Fa-Hsing*. Measurements became difficult. The comet moved daily southward appearing for a total of 63 days moving from the *Mao* (18th lunar mansion) to the *Fang* (fourth lunar mansion) and went out of sight after passing a total number of 15 lunar mansions." (YS 49/4b; HWHTK 212/61a; B; W287.)

The Japanese records, "On the fifth day in the sixth month of the second year of the Engen reign-period [3rd July, 1337] a (*hui*) comet trespassed against *Pei-Chi*." (*Dainihonshi* ch. 359; K.)

(456) 24th March, 1340. "On a *chi-yu* day in the second month [should read 'first month'] of the sixth year of the Chih-Yuan reign-period a (*hui*) comet as large as the stars in the *Fang* (fourth lunar mansion) was observed. It was white in colour and looked like loose cotton with a tail measuring about 5 in. It was pointing SW and measurements indicated its position at 7 degrees (*tu*) within the *Fang* (fourth lunar mansion). It gradually moved NW. On a *hsin-ssu* night [25th March] the comet was no longer visible. It had appeared for a total of 32 days

from a *chi-yu* day in the second month [should read 'first month'] to a *kêng-chhen* day in the third month [24th March].” (YS 49/7b; YS 40/4b and 5b; HTCKM 26/36a; HWHTK 212/61b; B; W288.)

(457) 31st July, 1345. The Korean says, “On a *chia-shen* day in the seventh month of the first year of Ch’ungmok Wang a (*hui*) comet appeared at the *Tzu-Wei* Enclosure. On a *ting-hia* day [3rd August] it appeared north of *Pei-Ho*.” (*Koryŏ-sa* ch. 47.)

The Japanese records, “On a *ping-hsü* day in the seventh month of the sixth year of the Kōkoku rieng-period [2nd August] a white (*hui*) comet about 4 ft long was seen in the NE.” (*Dainihonshi* ch. 359; K.)

(458) January–February, 1349. The Japanese records, “During the first month of the fourth year of the Shōhei reign-period [19th January to 17th February] a ‘guest star’ was seen.” (*Dainihonshi* ch. 359; K.)

(459) 24th November, 1351. “On a *hsin-hai* day in the 11th month of the 11th year of the Chih-Chêng reign-period a (*po*) comet was seen at the *Khuei* (15th lunar mansion). On a *kuei-chhou* day [26th November] the comet appeared at the *Lou* (16th lunar mansion). On a *chia-yin* day [27th November] it appeared at the *Wei* (17th lunar mansion). This happened again on an *i-mao* day [28th November]. On a *ping-chhen* day [29th November] the comet appeared at the *Mao* (18th lunar mansion). On a *ting-ssu* day [30th November] it was barely seen at the *Pi* (19th lunar mansion).” (YS 49/11b; HTCKM 26/64b; HWHTK 212/62a; com. B; W289.)

(460) 3rd May, 1356. The Korean says, “On a *kuei-chhou* day in the fourth month of the fifth year of Kongmin Wang a ‘guest star’ trespassed against the moon.” (*Chŭngbo Munhŏn Pigo* ch. 6.)

(461) 21st September, 1356. “On a *chia-hsü* day in the eighth month of the 16th year of the Chih-Chêng reign-period a (*hui*) comet was observed directly in the E as large [as the star at] the left corner of *Hsien-Yuan*. It was bluish-white in colour and was pointing SW. It measured about 1 ft. Observations indicated its position at 17·1 degrees (17 *tu* 10 *fên*) within the *Chang* (26th lunar mansion). It went out of sight on a *wu-wu* day in the tenth month [4th November] and had been seen moving in a NW direction for over 40 days.” (YS 49/13b; HTCKM 27/24b; HWHTK 212/61b; B; W290.)

(462) 18th March, 1360. “On a *wu-tzu* day, the first day in the third month of the 20th year of the Chih-Chêng reign-period a (*hui*) comet appeared at the E.” (YS 45/18b; HTCKM 27/52b; HWHTK 212/62b com; W291.)

Williams gives the date as 12th March and the direction as NE.

(463) 5th March, 1362. “On an *i-yu* day in the second month of the 22nd year of the Chih-Chêng reign-period a (*hui*) comet was seen. Its rays measured over 1 ft and its colour was bluish-white. Measurements indicated its position at 7·2 degrees (7 *tu* 20 *fên*) within the *Wei* (12th lunar mansion). On a *ting-yu* day [17th March] the comet trespassed against the western stars of *Li-Kung*. Towards the end of the second month its rays measured over 20 ft (2 *chang*). On a *wu-shen* day [28th March] in the third month the comet was not seen, but it left a bent white vaporous structure stretching across the heavens pointing towards the W and sweeping *Ta-Chio* [Areturus]. On a *jen-tzu* day [1st April] the comet passed the sun. Then the comet only appeared, but not its rays. The comet was as large as a wine glass with a dull and faint colour. Measurements showed its position at 6 degrees within the *Mao* (18th lunar mansion). On a *wu-wu* day [7th April] the comet went out of sight.” (YS 49/17a; YS 46/5a; HTCKM 27/61a; HWHTK 212/62a; B; W292.)

The last date is wrongly given by the HWHTK as *jen-wu* day.

The Japanese records, “During the second month of the 17th year of the Shōhei reign-period [25th February to 26th March] a (*hui*) comet was seen.” (*Dainihonshi* ch. 359; K.)

(464) 25th April, 1362. “On a *ping-tzu* day, the first day in the fourth month, in the summer of the 22nd year of the Chih-Chêng reign-period a (*chhang-hsing*) comet was observed. It

appeared like a chain several *chang* (1 *chang* = 10 ft) in length between the *Hsü* and the *Wei* (11 and 12th lunar mansions). It disappeared after more than 40 days." (YS 46/5a; HTCKM 27/61a com.; HWHTK 212/62b com.).

(465) 29th June, 1362. "On a *hsin-ssu* day in the sixth month of the 22nd year of the Chih-Chêng reign-period a (*hui*) comet appeared at the *Tzu-Wei* Enclosure. Measurements showed its position at 2.9 degrees (2 *tu* 90 *fên*) within the (*Chhien*-)*Niu* (ninth lunar mansion). It was white and its rays measured over 1 ft in length. It moved in a SE direction pointing towards the SW. On a *wu-tzu* day [6th July] the rays of the comet swept *Shang-Tsai*. On an *i-mao* day [2nd August] in the seventh month the comet went out of sight." (YS 49/17a; YS 46/5b; HTCKM 27/61b; HWHTK 212/62a; W293.)

The Korean says, "On a *hsin-ssu* day in the sixth month of the 11th year of Kongmin Wang [29th July, 1362] a (*hui*) comet was seen at the *Tzu-Wei* Enclosure below *Hua-Kai*. It measured about 1 ft and was seen for 3 days." (*Koryô-sa* ch. 47.)

(466) 16th March, 1363. "On a *hsin-chhou* day, the first day in the third month of the 23rd year of the Chih-Chêng reign-period a (*hui*) comet appeared in the E. After that month the comet went out of sight." (YS 46/9a; HTCKM 28/64b; HWHTK 212/62b com.; W294.)

(467) 30th March, 1364. The Korean says, "On a *hsin-yu* day in the second month of the 13th year of Kongmin Wang a (*hui*) comet was seen at the south of the *Thai-Wei* (Enclosure), one was seen by the side of *Ta-Chio* (Arcturus), one was seen at the NE of *Pei-Tou* and one was seen at the north of the *Ti* (third lunar mansion) with a red colour and measuring over 1 ft." (*Koryô-sa* ch. 47.)

(468) 25th October, 1366. "On a *kêng-tzu* day in the ninth month of the 26th year of the Chih-Chêng reign-period a (*po*) comet appeared by the side of the *Tzu-Wei* Enclosure and the star *Chuan* [ $\delta$ -Ursae Majoris] of *Pei-Tou*. Its colour resembled that of loose cotton and it was about as big as a peck measure. It moved SE, passed and trespassed against *Thien-Phou*. On a *hsin-chhou* day [26th October] the (*po*) comet was determined at 18.5 degrees (18 *tu* 50 *fên*) within the *Wei* (12th lunar mansion). On a *jen-yin* day [27th October] the comet was found at 2.5 degrees (2 *tu* 50 *fên*) within the *Nü* (tenth lunar mansion). On a *kuei-mao* day [28th October] it was determined at 9.9 degrees (9 *tu* 90 *fên*) within the *Nü* (tenth lunar mansion). On a *chia-chhen* day [29th October] it was found at 1.8 degrees (1 *tu* 80 *fên*) within the *Hsü* (11th lunar mansion). On an *i-ssu* day [30th October] it appeared between the *Tzu-Wei* Enclosure and the stars *Chuan* and *Yü-Hêng* of *Pei-Tou* and within the longitudes of the *Chen* (28th lunar mansion). It moved SE and trespassed against *Thien-Phou* [along its path] and passed through *Chien-Thai* and *Nien-Tao*. The comet only went out of sight after it had gone to the west of the *Hsü* (11th lunar mansion) and *Lei-Pi-Chen*." (YS 49/20b; HTCKM 27/85a; HWHTK 212/62b; B; W295.)

The Korean records, "On a *hsin-chhou* day in the ninth month of the 15th year of Kongmin Wang [26th October, 1366] a (*po*) comet appeared above the *Fang* and the *Hsü* (fourth and 11th lunar mansions). On a *jen-yin* day [27th October] it reappeared at the S." (*Koryô-sa* ch. 47.)

(469) 7th February, 1368. "On a *kêng-yin* day in the first month of the 28th year of the Chih-Yuan reign-period a (*hui*) comet appeared between the *Mao* and the *Pi* (18th and 19th lunar mansions)." (YS 47/11a; MS 27/9a; HWHTK 212/63a com.; MHY p. 1317; B; W296.)

(470) 8th April, 1368. "On a *hsin-mao* day in the third month of the first year of the Hung-Wu reign-period a (*hui*) comet was seen at the north of the *Mao* (18th lunar mansion) between *Ta-Ling* and *Thien-Chhuan*, measuring over 8 ft and pointing towards *Wên-Chhang*. It went close to *Wu-Chhê*. On a *chi-yu* day in the fourth month [26th April] the comet went out of sight at the north of *Wu-Chhê*." (MS 27/9a; YS 47/12a; HWHTK 212/63a com.; B; W297.)

The HWHTK says that the comet first appeared on a *kêng-yin* day [7th April].

The Korean says, "On a *chi-wei* day in the second month of the 17th year of Kongmin Wang [7th March, 1368] a (*hui*) comet measuring over 10 ft was seen at the W. On a *chia-shen* day



in the third month [4th April] it was seen at the W. On a *kêng-yin* day [10th April] it appeared between *Ta-Ling* and *Ch-Shih*. On a *hsin-mao* day [11th April] it appeared between *Ta-Ling* and *Chüan-Shê* with its rays shooting towards the nine stars of *Thien-Chhuan*. On a *ping-shen* day [16th April] it was seen above *Chüan-Shê*. On a *chi-hai* day [19th April] it appeared above *Ta-Ling*. On a *hsin-chhou* day in the fourth month [21st April] the comet was again seen." (*Koryô-sa* ch. 47.)

The Japanese records, "During the fourth month of the 23rd year of the Shôhei reign-period [18th April to 16th May] a (*hui*) comet was seen." (*Dainihonshi* ch. 359; K.)

(471) 31st January, 1370. The Korean says, "On a *chia-wu* day in the first month of the 19th year of Kongmin Wang a (*hui*) comet appeared at the NE." (*Koryô-sa* ch. 47.)

(472) April-May, 1373. "During the fourth month of the sixth year of the Hung-Wu reign-period [23rd April to 22nd May] a (*hui*) comet entered the *Tzu-Wei* Enclosure three times." (MS 27/9a; HWHTK 212/63b; MYH p. 1317; B; W298.)

(473) 15th March, 1374. The Korean says, "On a *wu-hsü* day in the second month of the 23rd year of Kongmin Wang a (*hui*) comet was observed at the E, measuring over 10 ft and lasting 45 days before going out of sight." (*Koryô-sa* ch. 47.)

The Japanese records, "On the 25th day in the first month of the third year of the Bunchô reign-period [8th March, 1374] a (*hui*) comet was seen. It appeared again on the 26th day [9th March]." (*Dainihonshi* ch. 359; K.)

(474) 22nd June, 1376. "On a *wu-tzu* day in the sixth month of the ninth year of the Hung-Wu reign-period a star as large as a pellet and with a white colour stopped at *Thien-Tsang*. It passed *Wai-Phing* and *Chüan-Shê*, entered the *Tzu-Wei* Enclosure, swept *Wên-Chhang* and pointed towards *Nei-Chhu*. It then entered the *Chang* (26th lunar mansion). On an *i-hai* day [8th August] it went out of sight." (MS 27/6b; HWHTK 215/32a; B; W345.)

The MHY says, "During the seventh month of the ninth year of the Hung-Wu reign-period [17th July to 15th August] a (*po*) comet was seen at *Pei-Tou*." (MHY p. 1317.)

The Korean says, "On a *wu-shen* day in the sixth month of the second year of the Sin-u reign-period [12th July] a (*hui*) comet appeared at *Wên-Chhang* with its rays pointing towards the *Tzu-Wei* Enclosure. On a *chia-yin* day in the seventh month [18th July] it was seen at the west of *Wên-Chhang* at about 4 to 5 ft away. Its rays were pointing towards the 'box' of *Pei-Tou*." (*Koryô-sa* ch. 47.)

The Japanese records, "On the 23rd day in the sixth month of the second year of the Tenju reign-period [10th July, 1376] a (*hui*) comet appeared at the NE. It measured over 3 ft and was white in colour. On the 28th day [25th July] it was seen instead at the NW measuring over 10 ft, and in the morning it appeared again at the NE." (*Dainihonshi* ch. 359; K.)

(475) 26th September, 1378. "On a *chia-hsü* day in the ninth month of the 11th year of the Hung-Wu reign-period a star appeared at the NE of *Wu-Chhê*. It emitted rays over 10 ft long and swept *Nei-Chieh*. It then entered the *Tzu-Wei* Enclosure, swept the five stars of *Pei-Chi*, trespassed against the star *Shao-Tsai* at the Eastern Wall and then entered the *Thien-Shih* Enclosure. It was trespassing against the *Thien-Shih* Enclosure until it went out of sight on a cloudy (night) on a *chi-wei* day in the tenth month [10th November]." (MS 27/6b; HWHTK 215/32a; B; W346.)

HWHTK calls it a "guest star".

CHU WÊN-HSIN (1933) suggests that this was Halley's comet; cf. also SCHÖVE (1955).

(476) 1379. The Japanese records, "A (*hui*) comet was observed during the fifth year of the Tenju reign-period." (*Dainihonshi* ch. 359; K.)

(477) 7th November, 1381. The Korean says, "On a *jen-shen* day in the tenth month of the seventh year of King Sin-u a (*hui*) comet appeared at the *Ti* (third lunar mansion). It measured over 10 ft and went out of sight after 15 days." (*Koryô-sa* ch. 47.)

(478) 11th March, 1382. The Korean says, "On a *ping-tzu* day in the second month of the eighth year of King Sin-u a (*po*) comet was seen at the north." (*Koryŏ-sa* ch. 47.)

(479) 5th September, 1382. The Korean says, "On a *chia-hsü* day in the seventh month of the eighth year of King Sin-u a 'star' was seen, and during the night an 'auspicious star' appeared at the west." (*Koryŏ-sa* ch. 47.)

(480) 19th September, 1382. The Korean says, "On a *wu-tzu* day in the eighth month of the eighth year of King Sin-u a (*hui*) comet appeared at the Eastern Wall of the *Thai-Wei* (Enclosure) measuring over 10 ft in length." (*Koryŏ-sa* ch. 47.)

(481) 23rd October, 1385. "On a *wu-yin* day in the ninth month of the 18th year of the Hung-Wu reign-period a star appeared at the *Thai-Wei* Enclosure. It trespassed against *Yu-Chih-Fa* and left by the 'Main-Gate' (*Tuan-Mên*). On an *i-yu* day [30th October] it entered the *I* (27th lunar mansion) measuring over 10 ft. On a *kêng-yin* day in the tenth month [4th November] it trespassed against *Chün-Mên* and swept *Thien-Miao*." (MS 27/6b; HWHTK 215/32b; B; W347.)

(482) 29th March, 1388. "On a *ping-yin* day in the second month of the 21st year of the Hung-Wu reign-period a star appeared at the *Tung-Pi* (14th lunar mansion)." (MS 27/7a; B; W348; L; Hsi.)

(483) 23rd May, 1391. "On a *ping-tzu* day in the fourth month of the 24th year of the Hung-Wu reign-period two (*hui*) comets were seen. One entered the *Tzu-Wei* Enclosure by the *Chhang-Ho-Mên* and trespassed against *Thien-Chhuang*. The other trespassed against *Liu-Chia* and swept *Wu-Ti-Nei-Tso*." (MS 27/9a; HWHTK 212/63b; MHY p. 1318; B; W299.)

The Korean says, "On a *chia-tzu* day in the fourth month of the third year of Kongyang Wang [11th May] a (*hui*) comet appeared for more than 10 days. On an *i-hai* day [22nd May] a 'guest star' trespassed against the *Tzu-Wei* (Enclosure)." (*Koryŏ-sa* ch. 47.)

(484) 18th March, 1392. The Korean says, "On a *ping-tzu* day in the second month of the fourth year of Kongyang Wang a (*hui*) comet stretched across the heavens." (*Koryŏ-sa* ch. 47.)

(485) 25th December, 1397. The Japanese records, "On the sixth day in the 12th month of the fourth year of the Ō-ei reign-period a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(486) October, 1399. The Japanese records, "During the ninth month of the sixth year of the Ō-ei reign-period [30th September to 28th October approx.] a 'guest star' was seen." (*Dainihonshi* ch. 359; K.)

(487) 20th February, 1402. The Korean says, "On a *jen-yin* day in the first month of the second year of T'aejong a (*hui*) comet measuring about 5 to 6 ft appeared at the east of the *Khuei* (15th lunar mansion) with its rays pointing eastward. On a *chia-chhen* day [22nd February] it appeared at the east measuring over 10 ft and with its rays radiating in all directions. On a *wu-wu* day in the second month [8th March] the rays of the comet continued to be of the same magnitude. On a *chi-ssu* day [19th March] the comet went out of sight." (*T'aejong Sillok* 3/4b to 3/10a.)

The Japanese records, "On the 19th day in the first month of the ninth year of the Ō-ei reign-period [20th February, 1402] a (*hui*) comet was sighted. It went out of sight after the 17th day in the second month [20th March approx.]." (*Dainihonshi* ch. 359; K.)

(488) 30th December, 1403. The Korean says, "On a *wu-shen* day in the intercalary 11th month of the third year of T'aejong a (*hui*) comet appeared in the NE." (*T'aejong Sillok* 6/29a.)

(489) 1st March, 1404. The Korean says, "On a *jen-hsü* day in the first month of the fourth year of T'aejong a (*po*) comet was seen at the E." (*T'aejong Sillok* 7/2b.)

(490) 14th November, 1404. "On a *kêng-chhen* day in the tenth month of the second year of the Yung-Lo reign-period a star like a lamp appeared at the south-east of *Nien-Tao*. It was yellow in colour and very bright, but remained stationary." (MS 27/7a; HWHTK 215/29b; Hsi.)

(491) 15th December, 1407. "On a *ping-yin* day in the 11th month of the fifth year of the Yung-Lo reign-period a (*hui*) comet was seen." (MS 27/9a; HWHTK 212/63b; MHY p. 1318; W300.)

Williams gives 14th December.

(492) 14th July, 1408. The Japanese records, "On the 21st day in the sixth month of the 15th year of the Ō-ei reign-period a 'guest star' was seen." (K.)

(493) 8th April, 1414. The Japanese records, "On the 18th day in the third month of the 21st year of the Ō-ei reign-period an 'evil star' was seen." (K.)

(494) September, 1415. "During the eighth month of the 13th year of the Yung-Lo reign-period [3rd September to 2nd October] a (*hui*) comet appeared at the *Nan-Tou* (eighth lunar mansion)." (MHY p. 1318.)

(495) 29th July, 1416. The Japanese records, "On the fifth day in the seventh month of the 23rd year of the Ō-ei reign-period an 'ominous star' was seen." (K.)

(496) 12th June, 1419. The Japanese records, "On the 19th day in the fifth month of the 26th year of the Ō-ei reign-period an object like a (*chhang-hsing*) comet was observed at the NE after 23.00 to 01.00 hr." (K.)

(497) 9th January, 1421. The Japanese records, "On the sixth day in the 12th month of the 27th year of the Ō-ei reign-period a (*hui*) comet measuring 5 ft appeared at the NW between 19.00 to 21.00 hr." (K.)

(498) 27th December, 1421. The Japanese records, "On the third day in the 12th month of the 28th year of the Ō-ei reign-period a 'guest star' was seen." (K.)

(499) October, 1423. The Japanese records, "During the ninth month of the 30th year of the Ō-ei reign-period [5th October to 2nd November approx.] 'guest stars' were seen at the east and at the west. They combined together and fell." (K.)

This might have been an auroral display.

(500) 9th September, 1430. "On a *kêng-yin* day in the eighth month of the fifth year of the Hsüan-Tê reign-period a star appeared by the side of *Nan-Ho*. It was as large as a pellet and its colour was dark-blue. After 26 days it went out of sight." (MS 27/7a; HWHTK 215/32b; B(1); L; W349; Hsi.)

(501) 14th November, 1430. "On a *ping-shen* day in the tenth month of the fifth year of the Hsüan-Tê reign-period a (*phêng-hsing*) comet appeared at the south of *Wai-Phing* moving in a SE direction. It passed *Thien-Tshang* and *Thien-Yü* and went out of sight after eight days." (MS 27/7a; HWHTK 215/32b; B; W350.)

(502) 4th January, 1431. "On a *ting-hai* day in the 12th month of the fifth year of the Hsüan-Tê reign-period a star like a pellet appeared by the side of *Chiu-Yu*. It was yellowish-white and very bright. It disappeared after 15 days. [It] again appeared on a *jen-wu* day in the third month of the sixth year [29th April]." (MS 27/7a; HWHTK 215/30a; L; W351; Hsi.)

Williams gives 3rd January.

(503) 15th May, 1431. "On a *wu-hsü* day in the fourth month of the sixth year of the Hsüan-Tê reign-period a (*po*) comet appeared at the *Tung-Ching* (22nd lunar mansion). It measured over 5 ft (*chhüh*)." (MS 27/9a; HWHTK 212/63b; MHY p. 1318; B; W301.)

Biot gives 27th March.

(504) 3rd February, 1432. "On a *jen-hsü* day in the first month of the seventh year of the Hsüan-Tê reign-period a (*hui*) comet appeared at the E measuring over 10 ft (1 *chang*). Its tail swept *Thien-Chin* and its course was towards the SE. During the tenth month [24th October to 22nd November] it went out of sight. On a *wu-tzu* day in the same month [26th October] (it) again appeared at the west, but went out of sight after 17 days." (MS 27/9a; HWHTK 212/63b; MHY p. 1318; B; W302; W303.)

The *Ming Shih Kao* also gives the same account as above. The HWHTK renders the record as "... The comet went out of sight after the tenth day. On a *wu-tzu* day in the same month [29th March](it) again appeared at the west, but went out of sight after 17 days."

(505) 15th September, 1433. "On a *jen-tzu* day in the intercalary eighth month of the eighth year of the Hsüan-Tê reign-period a (*hui*) comet appeared by the side of *Thien-Tshang* measuring over 10 ft (1 *chang*). On a *chi-ssu* day [2nd October] it entered *Kuan-So* and swept *Chhi-Kung*. On a *chi-mao* day [12th October] it again entered the *Thien-Shih* Enclosure and swept the star *Chin* ( $\kappa$  Ophiuchi). It went out of sight after 24 days." (MS 27/9a; HWHTK 212/63b; MHY p. 1318; B; W304.)

The Korean says, "On a *chi-ssu* day in the intercalary eighth month of the 15th year of Sejong [2nd October, 1433] a (*hui*) comet was seen within the longitudes of *Kuan-So*. On a *chi-hsü* day [7th October] it was seen at the western wall of the *Thien-Shih* Enclosure. On a *wu-tzu* day [21st October] the comet became smaller. On a *kêng-tzu* day in the ninth month [2nd November] the comet was at the western heavens and was very small. On a *jen-yin* day [4th November] the comet entered the western heavens and went out of sight." (*Sejong Sillok* 61/42a to 61/61b.)

The Japanese records, "On the 25th day in the eighth month of the fifth year of the Eikyô reign-period [8th October, 1433] a (*hui*) comet appeared within the longitudes of the *Wei* (sixth lunar mansion) near *Kuan-So*. It was white. After the 20th day in the ninth month [1st November] it went out of sight." (K.)

(506) 14th April, 1434. The Japanese records, "On the fifth day in the third month of the sixth year of the Eikyô reign-period a (*hui*) comet was seen at the E." (K.)

(507) 11th September, 1434. The Japanese records, "On the ninth day in the eighth month of the sixth year of the Eikyô reign-period a (*hui*) comet was seen at the E." (K.)

(508) 11th March, 1437. The Korean says, "On an *i-chhou* day in the second month of the 19th year of Sejong a 'guest star' appeared between the second and the third star of the *Wei* (sixth lunar mansion) and went out of sight after 14 days." (*Chûngbo Munhôn Pigo* ch. 6.)

(509) 16th March, 1438. The Japanese records, "On the 12st day in the second month of the tenth year of the Eikyô reign-period a 'guest star' was seen." (K.)

(511) 25th March, 1439. "On a *chi-chhou* day in the intercalary second month of the fourth year of the Chêng-Thung reign-period a (*hui*) comet as large as a pellet appeared beside the *Chang* (26th lunar mansion). On a *ting-yu* day [2nd April] it measured over 50 ft (5 *chang*) and moved towards the west sweeping *Chiu-Chhi*. It extended northwards and trespassed against the *Kuei* (23rd lunar mansion)." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; B; W305.)

The Korean says, "On a *ping-shen* day in the intercalary second month of the 21st year of Sejong [1st April] a (*hui*) comet was seen. On a *ting-yu* day [2nd April] it was again seen. On a *ting-wei* day [12th April] it appeared at the *Tung-Ching* (22nd lunar mansion). It appeared on a *wu-shen* day [13th April] and on a *hsin-hai* day in the third month [16th April] and went out of sight after 12 days." (*Sejong Sillok* 84/25a to 84/28a.)

The Japanese records, "On the 15th day in the second month of the 11th year of the Eikyô reign-period [29th March, 1439] a (*hui*) comet was seen at the (*Yü*)-*Kuei* in the evening." (K.)

(511) 12th July, 1439. "On a *wu-yin* day in the sixth month of the fourth year of the Chêng-Thung reign-period a (*hui*) comet appeared by the side of the *Pi* (19th lunar mansion), measuring over 10 ft (1 *chang*) and pointing SW. It went out of sight after a total of 55 days." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; W306.)

(512) 3rd March, 1443. The Japanese records, "On the fourth day in the fourth month of the third year of the Kakitsu reign-period an 'evil-star' was observed." (K.)

(513) 6th August, 1444. "On a *kêng-wu* day in the seventh month of the ninth year of the Chêng-Thung reign-period a (*hui*) comet appeared at the eastern wall of the *Thai-Wei* (Enclosure). It measured over 10 ft (1 *chang*): its length was increasing daily. On a *chi-mao* day in the intercalary seventh month [15th August] it entered the *Chio* (first lunar mansion) and went out of sight." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; B; W307.)

The Korean says, "On a *ping-tzu* day in the seventh month of the 26th year of Sejong (12th August, 1444) a (*hui*) comet was seen." (*Sejong Sillok* 105/13a.)

The Japanese records, "On the 23rd day in the intercalary sixth month of the first year of the Bun-an reign-period [7th August, 1444] a (*hui*) comet measuring 2 ft was sighted at WNW $\frac{1}{4}$ N. It went out of sight on the second day in the seventh month [15th August]." (K.)

(514) 20th December, 1449. "On a *jen-tzu* day in the 12th month of the 14th year of the Chêng-Thung reign-period a (*hui*) comet appeared at the *Thien-Shih* Enclosure by the side of *Shih-Lou*. It passed the longitudes of the *Wei* (sixth lunar mansion), measuring over 2 ft. It went out of sight on an *i-hai* day [12th January, 1450]." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; B; W308.)

"On a *jen-wu* day in the first month of the first year of the Ching-Thai reign-period [19th January, 1450] a (*hui*) comet appeared outside the *Thien-Shih* Enclosure, sweeping *Thien-Chi*." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; B; W309.)

These two appear to be one and the same comet from the following account of the Korean: "On a *wu-wu* day, the 12th day in the 12th month of the 31st year of Sejong [26th December, 1449] a (*hui*) comet was seen at the east within the *Thien-Shih* Enclosure, but not sighted later because of thick clouds. On a *ting-mao* day, the 21st day of the 12th month [27th December] the comet was again seen within the *Thien-Shih* Enclosure measuring about 5 to 6 ft. On a *kuei-szu* day in the first month of the 32nd year [30th January, 1450] the comet began to move out of sight." (*Sejong Sillok* 126/10b to 127/10b.)

(515) 21st March, 1452. "On a *chia-wu* day, the first day in the third month of the third year of the Ching-Thai reign-period a (*po*) comet appeared at the *Pi* (19th lunar mansion)." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; B; W310.)

(516) 4th January, 1453. "On a *kuei-wei* day in the 11th month of the third year of the Ching-Thai reign-period a star appeared at the (*Yü*-)*Kuei* (23rd lunar mansion) by the side of *Chi-Shih*. It moved slowly towards the west." (MS 27/7b; HWHTK 215/32b; B; W352.)

(517) 27th May, 1456. "On a *jen-hsü* day in the fourth month of the seventh year of the Ching-Thai reign-period a (*hui*) comet appeared at the NE at the *Wei* (17th lunar mansion), measuring 2 ft and pointing SW. On a *kuei-yu* day in the fifth month [7th June] its length increased to over 10 ft (1 *chang*). On a *wu-tzu* day [22nd June] it appeared at the NW at the *Liu* (24th lunar mansion) measuring over 9 ft, sweeping and trespassing against the stars of *Hsien-Yuan*. On a *chia-wu* day [28th June] it appeared at the *Chang* (26th lunar mansion) measuring over 7 ft, sweeping the north of the *Thai-Wei* (Enclosure) and moving SW. On a *jen-yin* day in the sixth month [6th July] it entered the *Thai-Wei* Enclosure and measured over 1 ft." (MS 27/9b; HWHTK 212/64a; MHY p. 1318; W311.)

This is Halley's comet; cf. PROCTOR and CROMMELIN (1937) p. 46, CHU (1933) and SCHÖVE (1955).

The Korean says, "On a *jen-shen* day in the fifth month of the second year of Sejo [6th June, 1456] a (*hui*) comet was seen. On a *kuei-yu* day [7th June], on a *chia-hsü* day [8th June], on an *i-hai* day [9th June], on a *wu-yin* day [12th June], on a *chi-mao* day [13th June], on an *i-yu* day [19th June], on a *wu-tzu* day [22nd June], on a *hsin-mao* [25th June], on a *chia-wu* day [28th June] and on an *i-wei* day [29th June] the comet was seen." (*Sejo Sillok* 4/2a to 4/9a.)

The Japanese records, "On the 27th day in the fourth month of the second year of the Kōshō reign-period [31st May, 1456] a (*hui*) comet measuring 3 ft appeared in the morning at the NE. Later it was seen at the NW. It appeared until the first day in the sixth month [3rd July]." (K.)

(518) 14th January, 1457. "On a *chia-yin* day in the 12th month of the seventh year of the Ching-Thai reign-period a (*hui*) comet again appeared at the *Pi* (19th lunar mansion) measuring 5 in. (*tshun*). It moved towards the SE and gradually increased in length. On a *kuei-hai* day [23rd January] it went out of sight." (MS 27/10a; HWHTK 212/64b; B; W312.)

(519) 15th June, 1457. "On a *ping-hsü* day in the fifth month of the first year of the Thien-Shun reign-period a (*hui*) comet appeared at the *Wei* (12th lunar mansion) and seemed to be vibrating. It moved 1 degree (*tu*) to the east; its rays measured 5 in. (*tshun*) and pointed towards the SW. On a *kuei-ssu* day in the sixth month [22nd June] it measured over 10 ft (1 *chang*) and concealed the (*Ying*-)*Shih* (13th lunar mansion). It moved from the *Wei* (12th lunar mansion) to the *Tung-Pi* (14th lunar mansion). It trespassed against *Thien-Ta-Chiang-Chün*, the third star of *Chüan-Shê* the (*Tung*-)*Ching* (22nd lunar mansion) and the second star in the south of *Shui-Wei*." (MS 27/10a; HWHTK 212/64b; MHY p. 1319; B; W313.)

Biot gives 15th May.

The Korean says, "On a *chia-wu* day in the sixth month of the third year of Sejo [23rd June, 1457] a (*hui*) comet was seen. On an *i-wei* day [24th June], on a *ping-shen* day [25th June], on a *ting-yu* day [26th June], on a *wu-hsü* day [27th June], on a *jen-yin* day [1st July], on a *ting-wei* day [6th July], on a *chi-yu* day [8th July], on a *kêng-hsü* day [9th July], on a *hsin-hai* day [10th July], on a *jen-tzu* day [11th July], on a *chia-yin* day [13th July], on a *ping-chhen* day [15th July] and on a *ting-ssu* day [16th July] the comet was seen." (*Sejo Sillok* 8/1a to 8/9b.)

The Japanese records, "On the ninth day in the seventh month of the first year of the Chōroku reign-period [30th July, 1457] a (*hui*) comet measuring 5 ft was observed at ENE½N in the morning. It is said that this comet was first seen at the beginning of the sixth month. On the 29th day in the seventh month [19th August] it was still visible." (K.)

(520) 26th October, 1457. "On a *chi-hai* day in the tenth month of the first year of the Thien-Shun reign-period a (*hui*) comet appeared at the *Chio* (first lunar mansion) measuring over 5 in. (*tshun*) and pointing north. It trespassed against the northern star of the *Chio* (first lunar mansion) and the eastern star of *Phing-Tao*." (MS 27/10a; HWHTK 212/64b; W314.)

The Korean says, "On a *kêng-tzu* day in the tenth month of the third year of Sejo [27th October, 1457] a (*hui*) comet was seen." (*Sejo Sillok* 8/18b.)

(521) 24th December, 1458. "On a *kuei-mao* day in the 11th month of the second year of the Thien-Shun reign-period a star appeared at the *Hsing* (25th lunar mansion). It was white in colour and was pointing towards the west. On a *ping-wu* day [27th December] its body became smaller and appeared like loose-cotton by the side of *Hsien-Yuan*. On a *kêng-hsü* day [31st December] it developed a ray measuring 5 in. (*tshun*) and trespassed against the north-western star of *Kuan-Wei*. On a *jen-hsü* day in the 12th month [12th January, 1459] it went out of sight at the *Tung-Ching* (22nd lunar mansion)." (MS 27/7b; HWHTK 215/33a; B; W353.)

The Korean says, "On a *wu-shen* day in the 11th month of the fourth year of Sejo [29th December, 1458] a (*hui*) comet was seen. On a *kêng-hsü* day [31st December], a *hsin-hai* day [1st January, 1459], on a *jen-tzu* day [2nd January], on a *kuei-chhou* day [3rd January], on a *chia-yin* day [4th January] and on an *i-mao* day, the first day in the 12th month [5th January] the comet was observed. On a *ping-chhen* day [6th January], on a *ting-ssu* day [7th January], on a *wu-wu* day [8th January], on a *chi-wei* day [9th January], on a *kêng-shen* day [10th January] and on a *kuei-hai* day [13th January] the comet was seen, but its light was faint. On a *jen-wu* day [1st February] the comet was seen. On a *ping-hsü* day in the first month of the fifth year [5th February] and on a *wu-tzu* day [7th February] the comet was seen. On a *chia-wu* day [13th February] the comet was at the north of the *Lou* (16th lunar mansion), but its rays were faint. On an *i-wei* day [14th February], on a *kêng-tzu* day [19th February], on a *hsin-chhou* day [20th February], on a *jen-yin* day [21st February], on a *chia-chhen* day [23rd February], on a *i-ssu* day [24th February], on a *ping-wu* day [25th February], on a *wu-shen* day [27th February], on a *hsin-hai* day [2nd March], on a *jen-tzu* day [3rd March], on a *kuei-chhou* day [4th March], on a *chia-yin* day, the first day in the second month [5th March], on an *i-mao* day [6th March], on a *wu-wu* day [9th March], on a *chi-wei* day [10th March], on a *kêng-shen* day [11th March], on a *hsin-yu* day [12th March], on a *jen-hsü* day [13th March], on a *kuei-hai* day [14th March],

on a *chia-tzu* day [15th March], on an *i-chhou* day [16th March], on a *ping-yin* day [17th March], on a *kêng-wu* day [21st March], on a *hsin-wei* day [22nd March], on a *kuei-yu* day [24th March], on a *chia-hsü* day [25th March], on a *ping-tzu* day [27th March], on a *wu-yin* day [29th March], on a *chi-mao* day [30th March], on a *kêng-chhen* day [31st March], on a *kuei-wei* day, the first day in the third month [3rd April] and on a *wu-tzu* day [8th April] the comet was seen, but its light was faint." (*Sejo Sillok* 14/19b to 15/17a.)

(522) 30th July, 1461. "On a *jen-chhen* day in the sixth month of the fifth year of the Thien-Shun reign-period a star as white as powder appeared by the side of *Tsung-Chêng* in the *Thien-Shih* Enclosure. On an *i-wei* day [2nd August] it turned into a white vapour and went out of sight." (MS 27/7b; HWHTK 215/33a; B; W354; L; Hsi.)

(523) 5th August, 1461. "On a *wu-hsü* day in the sixth month of the fifth year of the Thien-Shun reign-period a (*hui*) comet appeared at the E and pointed SW. It entered the longitudes of the (*Tung*-)*Ching* (22nd lunar mansion). On a *ping-yin* day in the seventh month [2nd September] it went out of sight." (MS 27/10a; HWHTK 212/64b; MHY p. 1319; B; W315.)

(524) 29th June, 1462. "On a *ping-yin* day in the sixth month of the sixth year of the Thien-Shun reign-period a star appeared by the side of *Tshê-Hsing*. Its colour was darkish-white. It entered the *Tzu-Wei* Enclosure and trespassed against *Thien-Lao*. On a *kuei-wei* day [16th July] it stayed below *Chung-Thai* and gradually became smaller." (MS 27/7b; HWHTK 215/33a; B; W355.)

(525) March, 1465. "During the second month of the first year of the Chhêng-Hua reign-period [25th February to 26th March] a (*hui*) comet was seen. It appeared again during the third month [27th March to 24th April] at the NW measuring over 30 ft. After three months it went out of sight." (MS 27/10a; HWHTK 212/65a; MHY p. 1319; B; W316.)

(526) 18th September, 1468. "On a *chi-wei* day in the ninth month of the fourth year of the Chhêng-Hua reign-period a star appeared at the 5th degree (*tu*) of the (*Chhi*-)*Hsing* (25th lunar mansion) moving towards the NE. After five days its rays exceeded 30 ft in length and its tail was pointing SW. By then it had changed into a (*hui*) comet. Henceforth it appeared in the morning at the east and at dusk at the south of the (*Ying*-)*Shih* (13th lunar mansion). It trespassed against *San-Kung*, the star *Yao-Kuang* in *Pei-Tou* and *Chhi-Kung*. Then it turned and entered the *Thien-Shih* Enclosure. After leaving this Enclosure it gradually diminished in size and trespassed against the first star at the west of *Thien-Phing*. It went out of sight on a *kêng-chhen* day in the eleventh month [8th December]." (MS 27/10a; HWHTK 212/65a; B; W317.)

The MHY gives a slightly different version saying, "During the seventh month of the fourth year of the Chhêng-Hua reign-period [19th July to 17th August] a (*po*) comet was observed at (*Pei*-)*Tou* and (*San*-)*Thai*. On a *kuei-hai* day in the ninth month [22nd September] a 'guest star', greyish-white in colour, with rays measuring 30 ft and pointing SW, changed itself into a (*hui*) comet. It swept *San-Thai* and went out of sight after 58 days." (MHY p. 1319.)

The Korean says, "On a *kuei-wei* day in the seventh month of the 13th year of Sejo [13th August, 1468] a large star appeared at dusk in the east with its rays hanging downwards. Again there was a red light like a star enveloping the large star. They went out of sight during the end of the second watch of the night. This happened for three nights." (*Sejo Sillok* 43/16b.) This Korean record might have been an auroral display.

The Japanese records, "On the sixth day in the ninth month of the second year of the Ōnin reign-period [22nd September, 1468] a (*hui*) comet appeared at the east for 30 days. It measured more than 10 ft." (K.)

(527) March-April, 1469. The Japanese records, "During the second month of the first year of the Bummei reign-period [12th February to 13th March approx.] a 'guest star' was seen." (K.)

(528) 3rd September, 1469. The Japanese records, "On the 27th day in the seventh month of the first year of the Bummei reign-period a (*hui*) comet was seen at the E." (K.)

The Korean says, "On a *chi-wei* day in the ninth month of the 14th year of Sejo [13th September, 1469] a (*hui*) comet was seen. On a *kêng-shen* day [14th September] and on a *jen-hsü* day [16th September] the comet was seen. On a *chia-tzu* day in the ninth month of the year of ascension of Yejong [18th September], on a *ping-yin* day [20th September], on a *wu-chhen* day [22nd September], on a *chi-ssu* day [23rd September], on a *kêng-wu* day [24th September], on a *hsin-wei* day [25th September], on a *jen-shen* day [26th September], on a *kuei-yu* day [27th September], on a *chia-hsü* day [28th September], on an *i-hai* day [29th September], on a *ting-chhou* day [1st October], on a *wu-yin* day [2nd October], on a *chi-mao* day [3rd October], on a *kêng-chhen* day [4th October], on a *hsin-ssu* day [5th October], on a *jen-wu* day [6th October], on a *kuei-wei* day [7th October], on a *chia-shen* day [8th October], on an *i-yu* day [9th October] and on a *ping-hsü* day [10th October] the comet was seen." (*Sejo Sillok* 47/19b to *Yejong Sillok* 1/23a.)

(529) 20th May, 1471. The Japanese records, "On the first day in the fifth month of the third year of the Bummei reign-period a 'guest star' was seen." (K.)

(530) 16th January, 1472. "On a *chia-hsü* day in the 12th month of the seventh year of the Chhêng-Hua reign-period a (*hui*) comet appeared at *Thien-Thien* pointing W. Presently it moved northwards trespassing against *Yu-Shê-Thi* and sweeping *Shang-Chiang* in the *Thai-Wei* Enclosure. It reached *Hsing-Chhen*, *Thai-Tzu* and *Chung-Kuan* with its tail pointing W and sweeping transversely the *Thai-Wei* Enclosure and *Lang-Wei*. On a *chi-mao* day [24th January] its rays grew in length and stretched across the heavens from east to west. It moved northwards for over 28 degrees (*tu*). It trespassed against *Thien-Chhiang*, swept *Pei-Tou*, *San-Kung* and *Thai-Yang* before it entered the *Tzu-Wei* Enclosure. It even appeared in midday. It had trespassed against the stars of *Ti-Hsing*, the 'box' of *Pei-Tou*, *Shu-Tzu*, *Hou-Kung*, *Kou-Chen*, *San-Shih*, *Thien-Lao*, *Chung-Thai*, *Thien-Huang-Ta-Ti*, *Shang-Wei*, *Wên-Chhang* and *Shang-Thai*. On an *i-yu* day [27th January] it moved south and trespassed against the *Lou* (16th lunar mansion), *Thien-Ho*, *Thien-Yin*, *Wai-Phing* and *Thien-Chhün*. On a *ping-wu* day in the first month of the eighth year [17th February] it passed the *Khuei* (15th lunar mansion) and *Wai-Phing*. Gradually its size diminished, but it took a long time to disappear altogether." (MS 27/10b; HWHTK 212/65a; MHY p. 1319; B; W318.)

The Korean says, "On an *i-chhou* night in the 11th month of the second year of Söngjong [7th January, 1472] a star appeared within the longitudes of the *Chio* (first lunar mansion) above *Thien-Thien* with faint rays. On a *ping-yin* night [8th January] the star appeared within the longitudes of the *Chio* (first lunar mansion) above *Thien-Thien* and with rays. On a *chi-ssu* night in the 12th month [11th January] the (*hui*) comet was seen within the longitudes of the *Chio* (first lunar mansion) above *Thien-Thien* with a tail measuring about 10 ft (1 *chang*). On a *kêng-wu* day [12th January] the comet was seen with a tail measuring about 3 ft (*chhih*). On a *jen-shen* day [14th January] the comet was seen with its tail measuring 10 ft (1 *chang*). On a *chia-hsü* day [16th January] the comet was seen with its tail measuring about 20 ft (2 *chang*). On an *i-hai* day [17th January] the comet was seen within the longitudes of the *Chio* (first lunar mansion) beneath *Chou-Ting* and with its tail measuring about 20 ft (2 *chang*). On a *ping-tzu* day [18th January] the comet was seen with its tail measuring about 20 ft (2 *chang*). On a *ting-chhou* day [19th January] the comet was seen with its tail measuring about 20 ft (2 *chang*). On a *wu-yin* day [20th January] the comet was seen with its tail measuring about 20 ft (2 *chang*). On a *chi-mao* day [21st January] the comet was seen at the *Tzu-Wei* Enclosure at *Thien-Tshang* and with its tail measuring about 20 ft (2 *chang*). On a *kêng-chhen* day [22nd January] the comet was seen at *Hua-Kai* and *Kang-Hsing* with its tail measuring about 20 ft (2 *chang*). On a *hsin-ssu* day [23rd January] the comet was seen north of *Wang-Liang*. On a *jen-shen* day [24th January] the comet was seen at the east of the *Khuei* (15th lunar mansion). On a *kuei-wei* day [25th January] the comet was seen at the east of the *Khuei* (15th lunar mansion). On a *chia-shen* day [26th January] the comet was seen at the south of the *Khuei* (15th lunar mansion) with its tail measuring about 10 ft (1 *chang*). On an *i-yu* day [27th January] the comet appeared at the south of the *Khuei* (15th lunar mansion) with its tail measuring about 10 ft. On a *ping-hsü* day [28th January] the comet was seen at the south of the *Khuei* (15th lunar mansion). On a *ting-hai* day [29th January] the comet was at the south of the *Khuei* (15th lunar mansion). On a *wu-tzu* day [30th January] the comet appeared at the south



of the *Khuei* (15th lunar mansion) above *Wai-Phing* and with its tail measuring about 10 ft. On a *chi-chhou* day [31st January] the comet appeared at the south of the *Khuei* (15th lunar mansion) above *Wai-Phing* and with its tail measuring about 10 ft. On a *keng-yin* day [1st February] the comet appeared at the south of the *Khuei* (15th lunar mansion) above *Wai-Phing* and with its tail measuring about 9 ft (*chhih*). On a *hsin-mao* day [2nd February] the comet was seen above *Wai-Phing*. On a *jen-chhen* day [3rd February] the comet appeared below *Wai-Phing* with its rays pointing eastward and its tail measured about 9 ft. On a *kuei-ssu* day [4th February] the comet appeared at the south of the *Khuei* (15th lunar mansion) and *Wai-Phing*. On a *chia-wu* day [5th February] the comet was seen at the south of *Wai-Phing*. On an *i-wei* day [6th February] the comet appeared at the south of *Wai-Phing* with its tail measuring about 5 to 6 ft. On a *wu-wu* day in the first month of the third year [9th February] the comet appeared at the south of *Wai-Phing* with its tail measuring about 5 ft. On a *chi-hai* day [10th February] the comet appeared at the south of *Wai-Phing* with its tail measuring about 5 ft. On a *keng-tzu* day [11th February] the comet appeared at *Thien-Chhün* with its tail measuring about 4 ft. On a *hsin-chhou* day [12th February] the comet appeared at *Thien-Chhün* with its tail measuring about 4 ft. On a *jen-yin* day [13th February] the comet appeared at the south of the *Khuei* (15th lunar mansion) and at *Thien-Chhün*. On a *kuei-mao* day [14th February] the comet was seen. On a *chia-chhen* day [15th February] the comet was seen. On an *i-ssu* day [16th February] the comet was faintly seen. On a *ping-wu* day [17th February] the comet was visible. On a *keng-hsü* day [21st February] the comet was faintly visible." (*Sôngjong Sillok* 13(14a to 14/5b.)

The Japanese records, "On the first day in the 12th month of the third year of the Bummei reign-period [2nd January, 1472] a (*hui*) comet, measuring 3 ft (*chhih*) in length was observed in the east at the *Thai-Wei* Enclosure. It later turned to appear at the west. On the second day of the first month (of the following year) [10th February] it was still seen." (K.)

(531) *February*, 1476. The Japanese records, "During the first month of the eighth year of the Bummei reign-period [27th January to 24th February approx.] a 'guest star' was seen." (K.)

(532) *17th May*, 1480. The Japanese records, "On the sixth day in the second month of the 12th year of the Bummei reign-period a (*hui*) comet was seen at the SE." (K.)

(533) *June-July*, 1482. The Japanese records, "During the sixth month of the 14th year of the Bummei reign-period [16th June to 15th June approx.] a large star was seen at the east. It was perhaps a 'guest star'." (K.)

(534) *31st December*, 1490. "On a *wu-hsü* day in the 11th month of the third year of the Hung-Chih reign-period a (*hui*) comet appeared at the south of *Thien-Chin* with its tail pointing NE. It trespassed against *Jen-Hsing* and passed *Chhu-Chiu*. On a *wu-shen* day, the first day in the 12th month [10th January, 1491] it entered the *Ying-Shih* (13th lunar mansion). On a *keng-shen* day [22nd January] it trespassed against *Thien-Tshang*." (MS 27/10b; HWHTK 212/65b; MHY p. 1319; B; W319.)

The Japanese records, "On the 24th day in the 11th month of the first year of the Entoku reign-period [4th January, 1491] a white (*hui*) comet measuring 5 ft appeared at 10.00 to 21.00 hr at the west among the (*Ying*)-*Shih* (13th lunar mansion)." (K.)

The Korean says, "On an *i-mao* day in the 12th month of the 21st year of Songjong [17th January, 1491] a star appeared at the *Thien-Shih* (Enclosure) moving from the western wall, passed *Chhê-Ssu* and reached *Shih-Lou*. Again it moved from the eastern wall to *Thien-Tshang*. It went out of sight on a *kuei-wei* day in the first month of the following year (14th February, 1491)." (*Chôngbo Munhôn Pigo* ch. 6.)

(535) *19th January*, 1491. "On a *ting-ssu* day in the 12th month of the third year of the Hung-Chih reign-period a star appeared at the *Thien-Shih* Enclosure moving towards the SE. On a *wu-chhen* day [30th January] it appeared below *Thien-Tshang* and gradually faced the *Tung-Pi* (14th lunar mansion)." (MS 27/7b; HWHTK 215/33a; B; W356.)

This looks very much like the same comet as No. 534.

(536) 7th January, 1495. "On a *ping-yin* day in the 12th month of the seventh year of the Hung-Chih reign-period a star appeared beside *Thien-Chiang* moving slowly and approached the (*Nan*-)*Tou* (eighth lunar mansion). On a *kêng-hsü* day in the first month of the eighth year [20th March] it entered the *Wei* (12th lunar mansion)." (MS 27/7b; HWHTK 215/33a; B; W357.)

(537) 16th August, 1499. "On a *wu-chhen* day in the seventh month of the 12th year of the Hung-Chih reign-period a star appeared beside *Tsung-Hsing* in the *Thien-Shih* Enclosure. It entered the eastern wall of the *Tzu-Wei* Enclosure, passed *Shao-Tsai* and *Shang-Shu* and reached *Thai-Tzu* and *Hou-Kung*. It left from the western wall by the side of *Shao-Fu*. On a *chi-chhou* day in the eighth month [6th September] it went out of sight." (MS 27/8a; HWHTK 215/33b; B; W358.)

The Korean says, "On a *ping-tzu* day in the seventh month of the fifth year of Yönsan-gun a 'guest star' trespassed against the first star of *Pei-Chi* in the *Tzu-Wei* (Enclosure) [24th August, 1499]." (*Chŭngbo Munhŏn Pigo* 6/21a.)

(538) 8th May, 1500. "On a *chia-wu* day in the fourth month of the 13th year of the Hung-Chih reign-period a (*hui*) comet appeared above *Lei-Pi-Chen*. It got between the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (13th and 14th lunar mansions) and increased its length to over 3 ft (*chhih*) pointing towards *Li-Kung* and sweeping *Tsao-Fu*. After passing the *Thai-Wei* Enclosure it became smaller. Then it entered the *Tzu-Wei* Enclosure, approached *Nü-Shih* and trespassed against *Shang-Shu*. On a *ting-yu* day in the sixth month [10th July] it went out of sight." (MS 27/11a; HWHTK 212/66a; MHY p. 1319; B; W320.)

The Japanese records, "On the 26th day in the fourth month of the ninth year of the Mei-ō reign-period [24th May, 1500] a white (*hui*) comet appeared between 23.00 and 01.00 hr at NNE½E. It measured 2 ft (*chhih*) in length." (K.)

The Korean says, "On a *chia-chhen* day in the fourth month of the sixth year of Yönsan-gun [18th May] a (*hui*) comet was seen. Its tail measured 5 to 6 ft. It went out of sight on a *wu-tzu* day in the sixth month [1st July]." (*Chŭngbo Munhŏn Pigo* 6/27b.)

(539) 28th November, 1502. "On a *wu-chhen* day in the tenth month of the 15th year [of the Hung-Chih reign-period] a star appeared by the side of *Thien-Mai* reaching the *I* (27th lunar mansion) from the *Chang* (26th lunar mansion) and then receded back to the *Chang* (26th lunar mansion). It disappeared on a *wu-yin* day [8th December]." (MS 27/8a; HWHTK 215/33b; B(1); W359.)

(540) 31st July, 1506. "On a *chi-chhou* day in the seventh month of the first year of the Chêng-Tê reign-period a star like a pellet and with a darkish-white colour appeared outside the western wall of the *Tzu-Wei* (Enclosure). A few days later it developed some faint rays and appeared between the *Shen* and the (*Tung*-)*Ching* (21st and 22nd lunar mansions). Its length gradually increased to 2 ft like a broom, and then it reached *Wên-Chhang* in the north-west. On a *kêng-tzu* day [11th August] the comet showed a bright ray extending SE to a length of 3 ft. After three days it measured about 5 ft and swept the uppermost star of *Hsia-Thai*. (Finally) it entered the *Thai-Wei* Enclosure." (MS 27/11a; HWHTK 212/66a; MHY ch. 268; B; W231 and W322.)

Williams splits this into two entries and gives 10th August for the second date.

The Japanese records, "On the 18th day in the seventh month of the third year of the Eishō reign-period [7th August] a (*hui*) comet appeared at 19.00 to 21.00 hr at NNW½W at *Nei-Chhih*. It measured 10 ft and was white in colour." (K.)

(541) January–February, 1520. "A (*hui*) comet was observed during the first month of the 15th year (of the Chêng-Tê reign-period) [20th January to 18th February]." (MS 27/11a; HWHTK 212/66a; MHY ch. 68; B; W323.)

(542) 7th February, 1521. "On a *chia-yin* day, the first day in the first month of the 16th year of the Chêng-Tê reign-period a star like a fire appeared in the SE. It turned white, measuring 6 to 7 ft, and stretched from E to W. It then became bent like a hook and disappeared after some time." (MS 27/8a; HWHTK 215/33b; MHY ch. 68; B(1); W360.)

Could this be an auroral display?

(543) *July-August, 1523*. "During the sixth month of the second year of the Chia-Ching reign-period [13th July to 10th August] a (*po*) comet appeared at the *Thien-Shih* (Enclosure)." (MS 27/11a; HWHTK 212/66b; MHY ch. 68; B; W324.)

(544) *9th February, 1529*. "On the *li-chhun* day in the first month of the eighth year of the Chia-Ching reign-period a (*chhang-hsing*) comet stretched across the heavens." (MS 27/8a; B(1); W361.)

Williams gives the date as 5th February.

(545) *August, 1529*. "(A *chhang-hsing* comet appeared) again during the seventh month (of the eighth year of the Chia-Ching reign-period) [4th August to 2nd September]." (MS 27/8a.)

The Korean says, "On a *jen-hsü* day in the seventh month of the 24th year of Chungjong [1st September] a (*hui*) comet appeared in the W. It measured 4 to 5 ft and was white in colour. On a *chi-mao* day [18th September] it shifted to the E." (*Chŭngbo Munhŏn Pigo* 6/27b.)

(546) *5th February, 1531*. The Japanese records, "On the 18th day of the first month of the fourth year of the Kyōroku reign-period a (*hui*) comet was seen. It did not go out of sight until the third month." (K.)

(547) *5th August, 1531*. "On an *i-ssu* day in the intercalary sixth month of the tenth year [of the Chia-Ching reign-period] a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) measuring over 1 ft and brushing the first star of *Hsien-Yuan*. Its rays increased in length. When it reached the *I* (27th lunar mansion) it measured over 7 ft and swept *Thien-Tsun* at the NE. It entered the *Thai-Wei* Enclosure, swept across *Lang-Wei* and then brushed the second star from the north of the *Khang* (second lunar mansion) at the SE as it moved to the longitudes of the *Chio* (first lunar mansion). It gradually diminished (in size) and went out of sight after 34 days." (MS 27/11a; HWHTK 212/66b; MHY ch. 68; B; W325.)

This is Halley's comet; cf. for example SCHÖVE (1955).

The Korean says, "On a *keng-hsü* day in the intercalary sixth month of the 26th year of Chungjong [10th August] a (*hui*) comet appeared outside the eastern wall of the *Thai-Wei* (Enclosure). Its tail extended over 10 ft and its colour was white." (*Chŭngbo Munhŏn Pigo* 6/27b.)

The Japanese records, "On the 27th day in the sixth month of the fourth year of the Kyōroku reign-period [9th August] a (*hui*) comet appeared at the NE at 05.00 to 07.00 hr. It measured 5 ft and was bluish-white. During the seventh month it shifted to the NW." (K.)

(548) *9th March, 1532*. "On a *jen-wu* day in the second month of the 11th year (of the Chia-Ching reign-period) a star appeared at the SE. It was of a darkish-white colour, and pointed rays were emitted. After 19 days it went out of sight." (MS 27/8a; HWHTK 215/33b; B(1); W362.)

(549) *21st June, 1532*. The Japanese records, "On the 18th day in the fifth month of the first year of the Tembun reign-period a (*hui*) comet was seen at the NE. It went out of sight at the seventh month." (K.)

(550) *2nd September, 1532*. "On a *chi-mao* day in the eighth month of the 11th year (of the Chia-Ching) reign-period a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion) measuring about 1 ft. Later it moved NE and passed *Thien-Chin*. It then gradually increased to over 10 ft and swept across the various stars in the *Thai-Wei* Enclosure, the *Chio* (first lunar mansion) and *Thien-Mên*. (It appeared) until a *chia-hsü* day in the 12th month [21st December] and went out of sight after 115 days." (MS 27/11b; HWHTK 212/66b; MHY ch. 68; B; W326.)

The MHY says that the comet lasted 155 days.

The Korean says, "On a *hsin-mao* day in the eighth month of the 27th year of Chungjong [14th September] a (*hui*) comet appeared at the *Liu* (24th lunar mansion). On a *chi-yu* day in the ninth month [2nd October] it shifted to the E; its tail measured about 10 ft and it was white in colour. It appeared until a *wu-yin* day in the 12th month [30th December] when its light became faint." (*Chŭngbo Munhŏn Pigo* 6/27b.)

The Japanese records, "On the 16th day of the eighth month of the first year of the Tembun reign-period [15th September] a (*hui*) comet appeared at the E and lasted till the ninth month." (K.)

(551) 1st July, 1533. "On a *hsin-ssu* day in the sixth month of the 12th year (of the Chia-Ching reign-period) a (*hui*) comet measuring over 5 ft appeared at *Wu-Chhê*, sweeping *Ta-Ling* and *Thièn-Ta-Chiang-Chün*. Its length gradually increased to over 10 ft. Then it swept *Ko-Tao* and trespassed against *Thêng-Shê*. On a *wu-hsü* day in the eighth month [16th September] it went out of sight." (MS 27/11b; HWHTK 212/66b; MHY ch. 68; B; W327.)

The MHY says, "During the sixth month of the 12th year a (*hui*) comet appeared at the *Mao* and the *Pi* (18th and 19th lunar mansions) with its rays pointing towards the Milky Way. During the eighth month it again was seen at the *Tung-Ching* (22nd lunar mansion)."

The Korean says, "On a *ting-chhou* day in the sixth month of the 28th year of Chungjong [27th June] a (*hui*) comet appeared at the north of *Wu-Chhê* with a tail measuring 7 or 8 ft. Its colour was white. It entered *Thien-Chhuan*, passed *Wang-Liang* and *Thêng-Shê* and reached *Thien-Chin*. On a *ting-chhou* day in the eighth month [26th August] its size gradually diminished." (*Chũngbo Munhŏn Pigo* 6/27b.)

The Japanese records, "On the 18th day in the sixth month of the second year of the Tembun reign-period [15th July] a (*hui*) comet was seen at the N. It was still seen on the third day of the seventh month." (K.)

(552) 12th June, 1534. "On a *ting-mao* day, the first day in the fifth month of the 13th year [of the Chia-Ching reign-period] a star appeared at *Thêng-Shê*. It passed *Thien-Chiu* and entered *Ko-Tao*, and went out of sight after 24 days." (MS 27/8a; HWHTK 215/33b; B(1); W363.)

(553) 24th March, 1536. "On a *wu-wu* day in the third month of the 15th year (of the Chia-Ching reign-period) a star appeared by the side of *Thien-Phou*. It moved eastward, passed *Thien-Chhu* and entered the Milky Way from the west. On a *jen-chhen* day in the fourth month [27th April] it went out of sight." (MS 27/8a; HWHTK 215/33b; MHY ch. 68; B(1); W364.)

(544) 8th March, 1537. The Japanese records, "On the 27th day in the first month of the sixth year of the Tembun reign-period a (*hui*) comet appeared at the NW." (K.)

(555) 9th January, 1538. The Japanese records, "On the ninth day in the 12th month of the sixth year of the Tembun reign-period a (*hui*) comet was seen." (K.)

The Korean says, "On a *ping-yin* day in the 12th month of the 32nd year of Chungjong [21st January] a (*hui*) comet appeared in the W. It measured about 30 ft and was of a white colour. On a *chia-hsü* day [29th January] it developed a faint vapour." (*Chũngbo Munhŏn Pigo* 6/27b.)

(556) 30th April, 1539. "On a *kêng-hsü* day in the fourth month of the 18th year (of the Chia-Ching reign-period) a (*hui*) comet was seen. It measured about 3 ft, while its rays pointed SE and swept the eighth star of *Hsien-Yuan*. After ten days it went out of sight." (MS 27/11b; HWHTK 212/66b; MHY ch. 68; B; W328.)

The Korean says, "On a *kêng-tzu* day in the fourth month of the 34th year of Chungjong [20th April] a (*hui*) comet appeared at *Hsien-Yuan*. Its tail measured 5 or 6 ft and it was white in colour. During the fifth month [18th May to 15th June] it passed *Chiu-Chhi* and arrived at the south of the *Hsing* (25th lunar mansion)." (*Chũngbo Munhŏn Pigo* 6/27b.)

The Japanese records, "During the eighth year of the Tembun reign-period (A.D. 1539) a (*hui*) comet was observed." (K.)

(557) 26th December, 1545. "On a *jen-wu* day in the 11th month of the 24th year (of the Chia-Ching reign-period) a star appeared at *Thien-Phou*. It entered the *Chi* (seventh lunar mansion) and turned to a NE course. In the following month it went out of sight." (MS 27/8a; HWHTK 215/34a; B(1); W365.)

(558) 7th March, 1549. The Korean says, "On a *chi-yu* day in the second month of the fourth year of Myǒngjong a (*hui*) comet was seen at the NE. During the third month [29th March to 26th April] it shifted to the E." (*Chǔngbo Munhǒn Pigo* 6/28a.)

(559) 23rd June, 1554. "On a *kuei-hai* day in the fifth month of the 33rd year (of the Chia-Ching reign-period) a (*hui*) comet appeared beside *Thien-Chhüan* [ $\delta$  UMa] trespassing against *Wên-Chhang*. It then moved near the horizon (*shu*) and disappeared after 27 days." (MS 27/11b; HWHTK 212/67a; MHY ch. 68; B; W329.)

Williams interprets the word "*shu*" as the star  $\alpha$  Serpentis.

The Korean says, "On a *ping-yin* day in the fifth month of the ninth year of Myǒngjong [26th June] a (*hui*) comet appeared at *Pei-Tou*. Its tail measured 1 ft and 4 or 5 in. and it was of a white colour. On a *hsin-ssu* day in the sixth month [11th July] it went out of sight." (*Chǔngbo Munhǒn Pigo* 6/28a.)

(560) 1st March, 1556. "On a *kéng-chhen* day in the first month of the 35th year (of the Chia-Ching reign-period) a (*hui*) comet appeared by the side of *Chin-Hsien* measuring about 1 ft and pointing SW. It gradually increased to over 3 ft and swept (the star) *Tzhu-Hsiang* in the *Thai-Wei* Enclosure. (Then it moved) NE and entered the *Tzu-Wei* Enclosure, trespassing against *Thien-Chhuang*. On the second day in the fourth month [10th May] it went out of sight." (MS 27/11b; HWHTK 212/67a; MHY ch. 68; B; W330.)

The Korean says, "On a *kéng-chhen* day in the first month of the 11th year of Myǒngjong [1st March] a (*hui*) comet was seen at the *Chen* (28th lunar mansion). Passing the *Chio* and the *Khang* (first and second lunar mansions) it entered the *Tzu-Wei* (Enclosure). Its tail measured about 5 ft and it was white in colour. On a *kéng-wu* day in the third month [20th April] it reached the *Tung-Pi* (14th lunar mansion), but both its size and its brightness had gradually diminished." (*Chǔngbo Munhǒn Pigo* 6/28a.)

The Japanese records, "On the 23rd day in the first month of the second year of the Kōji reign-period a (*hui*) comet was seen in the E." (K.)

(561) 10th October, 1557. "On a *wu-chhen* day in the ninth month of the 36th year [of the Chia-Ching reign-period] a (*hui*) comet appeared by the side of *Lieh-Ssu* in the *Thien-Shih* Enclosure pointing NE. It disappeared on the 23rd day in the tenth month [13th November]." (MS 27/11b; HWHTK 212/67a; MHY ch. 68; B; W331.)

The Korean says, "On a *hsin-wei* day in the ninth month of the 12th year of Myǒngjong [13th October] a (*hui*) comet appeared within the *Thien-Shih* (Enclosure) with a tail measuring about 1 ft and a white colour. During the tenth month [22nd October to 20th November] it shifted to the *Nan-Tou* (eighth lunar mansion). It had diminished both in size and in brightness." (*Chǔngbo Munhǒn Pigo* 6/28a.)

(562) 8th August, 1558. The Korean says, "On a *kéng-wu* day in the seventh month of the 13th year of Myǒngjong a (*hui*) comet appeared within the *Thai-Wei* (Enclosure) with its tail measuring 4 or 5 ft and a white colour. During the intercalary (seventh) month [14th August to 11th September] it shifted within the *Thien-Shih* (Enclosure) and its size had diminished." (*Chǔngbo Munhǒn Pigo* 6/28a.)

The Japanese records, "On the 25th day in the intercalary sixth month of the first year of the Eiroku reign-period [9th August] a (*hui*) comet was seen. It disappeared about the sixth day of the seventh month." (K.)

(563) 10th January, 1567. The Korean says, "On a *ting-hai* day, the first day in the 12th month of the 21st year of Myǒngjong a star like a (*chhang-hsing*) comet 3 or 4 in. broad and 5 or 6 ft long appeared in the S. It was wide at the top, but narrow at the base." (*Chǔngbo Munhǒn Pigo* 6/21a and 6/28a.)

(564) 9th November, 1569. "On a *hsin-chhou* day in the tenth month of the third year of the Lung-Chhing reign-period a (*hui*) comet appeared at the *Thien-Shih* Enclosure pointing NE. It went out of sight on a *kéng-shen* day [28th November]." (MS 27/12a; HWHTK 212/67a; MHY ch. 68; B; W332.)

(565) 8th November, 1572. "In winter, on a *ping-chhen* day in the tenth month [of the sixth year of the Lung-Chhing reign-period] a (*hui*) comet appeared in the NE. It went out of sight

only during the fourth month of the second year of the Wan-Li reign-period [21st April to 19th May, A.D. 1574].” (*Ming Shih Kao* 16/1b.)

It is curious that this important record is mentioned only in the *Chronicle of the Emperor Shen-Tsung* of the draft version of the history of the Ming Dynasty, but is omitted in that part of the *Chronicle* of the official history itself. The astronomical chapters in the official history, however, says, “There are also [stars] that did not exist before. The ‘guest star’ beside *Tshê-Hsing* [ $\alpha$  Cas] first appeared during the first year of the Wan-Li reign-period. At the beginning it was large, but now it is small.” (MS 25/5b.)

This has been identified as Tycho’s nova, a supernova and also a radio point source. (Hsi.)

The Korean says, “During the tenth month of the fifth year of Sŏnjo [6th November to 4th December] a ‘guest star’ appeared by the side of *Tshê-Hsing* ( $\alpha$  Cas). It was as big as Venus.” (*Chŭngbo Munhŏn Pigo* 6/21b.)

(566) *July–August*, 1576. “During the seventh month of the fourth year of the Wan-Li reign-period [26th July to 23rd August] a (*hui*) comet was seen.” (MHY ch. 68.)

(567) *July–August*, 1577. The Korean says, “During the seventh month of the tenth year of Sŏnjo [15th July to 13th August] a (*hui*) comet was seen.” (*Chŭngbo Munhŏn Pigo* 6/28a.)

(568) *14th November*, 1577. “On a *wu-tzu* day in the tenth month of the fifth year of the Wan-Li reign-period a (*hui*) comet was seen in the SW. It was of a darkish-white colour and measured several tens of feet. The vapour forms a white ‘rainbow’ stretching from the *Wei* and the *Chi* (sixth and seventh lunar mansions), crossed the (*Nan*-)*Tou* and the (*Chhien*-)*Niu* (eighth and ninth lunar mansions) and reached the (*Hsü*-)*Nü* (tenth lunar mansion). It went out of sight after 1 month.” (MS 27/12a; HWHTK 212/67a; MHY ch. 68; B; W333.)

The Korean says, “During the tenth month of the tenth year of Sŏnjo [10th November to 8th December] an ‘evil star’ appeared at the W with its rays measuring tens of feet. It appeared like a (*hui*) comet, but was not a (*hui*) comet: people called it a banner of *Chhih-Yu*.” (*Chŭngbo Munhŏn Pigo* 6/28a.)

The Japanese records, “On the 28th day in the ninth month of the fifth year of the Tenshō reign-period [8th November] a (*hui*) comet appeared in the evening at the SW measuring about 50 ft. It had a nucleus and a white tail, and was as bright as the moon. Then it assumed the form of the character ‘ta’ [big], [*i.e.* like a man standing with legs opened and arms stretched, both sideways]. It lasted until the middle of the first month in the following year.” (K.)

(569) *22nd February*, 1578. “On a *wu-chhen* day in the first month of the sixth year of the Wan-Li reign-period a large star like the sun came out from the west, encircled by a number of stars at the west.” (MS 27/8b; HWHTK 215/34a; B(1) W366; L; Hsi.)

The Korean says, “In autumn, during the 11th year of Sŏnjo a (*chhang-hsing*) comet stretched across the heavens like a white chain. It went out of sight after a few days.” (*Chŭngbo Munhŏn Pigo* 6/28a.)

(570) *1st October*, 1580. “On a *kêng-shen* day in the eighth month of the eighth year (of the Wan-Li reign-period) a (*hui*) comet appeared at the SE. It increased in length every night and stretched across the Milky Way. After more than 70 days it went out of sight.” (MS 27/12a; HWHTK 212/67b; MHY ch. 68; B; W334.)

The Korean says, “On a *chia-hsü* day in the ninth month of the 13th year of Sŏnjo [15th October] a (*hui*) comet was seen.” (*Chŭngbo Munhŏn Pigo* 6/28a.)

The Japanese records, “From the first day of the ninth month of the eighth year of the Tenshō reign-period (9th October) a (*hui*) comet was seen for several days.” (K.)

(571) *20th May*, 1582. “On a *ping-chhen* day in the fourth month of the tenth year (of the Wan-Li reign-period) a (*hui*) comet appeared in the NW like a chain with its tail pointing towards *Wu-Chhê*. After more than 20 days it went out of sight.” (MS 27/12a; HWHTK 212/67b; MHY ch. 68; B; W335.)

The Japanese records, “On the 21st day in the fourth month of the tenth year of the Tenshō reign-period [13th May] a (*hui*) comet appeared in the evening at the NW. It measured 100 ft like a white cloud or rainbow.” (K.)

(572) 11th July, 1584 (Gregorian Calendar.) "On a *chi-yu* day in the sixth month of the 12th year [of the Wan-Li reign-period] a star appeared at the *Fang* (fourth lunar mansion)." (MS 27/8b; HWHTK 215/34a; B(1); W367; L; Hsi.)

(573) 13th October, 1585. (Gregorian Calendar.) "On a *wu-tzu* day in the ninth month of the 13th year (of the Wan-Li reign-period) a (*hui*) comet appeared by the side of *Yü-Lin* measuring about 1 ft. Every evening it was found moving eastward and diminishing in size. It went out of sight on a *kuei-yu* day in the tenth month [27th November]." (MS 27/12a; HWHTK 212/67b; MHY ch. 68; B; W336.)

The Korean says, "On a *hsin-mao* day in the ninth month of the 18th year of Sŏnjo [16th October] a (*hui*) comet was seen by the side of *Yü-Lin* with its tail measuring over 1 ft." (*Chŭngbo Munhŏn Pigo* 6/28a.)

The Japanese records, "On the 25th day in the intercalary eighth month of the 13th year of the Tenshō reign-period a (*hui*) comet was seen at the SE and NE." (K.)

(574) 30th August, 1587. (Gregorian Calendar.) The Japanese records, "On the 27th day in the seventh month of the 15th year of the Tenshō reign-period an object like a 'guest star' was seen throughout the day." (K.)

(575) October, 1587. (Gregorian Calendar.) The Korean says, "During the ninth month of the 20th year of Sŏnjo [2nd October to 30th October] a (*hui*) comet was seen at the W. Its tail was bent and measured 30 to 40 ft. Its rays illuminated the ground. After three months it went out of sight." (*Chŭngbo Munhŏn Pigo* 6/28b.)

(576) 13th April, 1591 (Gregorian Calendar.) "On a *ping-chhen* day in the third month of the 19th year (of the Wan-Li reign-period) a star appeared in the NW. It looked like a (*hui*) comet and measured about over 1 ft. It passed the *Wei*, the (*Ying*-)*Shih* and the (*Tung*-)*Pi* (12th, 13th and 14th lunar mansions) and then measured about 2 ft. On a *ping-yin* day, the first day in the intercalary third month [23rd April] it entered the *Lou* (16th lunar mansion)." (MS 27/12a; HWHTK 212/67b; MHY ch. 68; B; W337.)

(577) 28th November and 2nd December, 1592. (Gregorian Calendar.) The Korean says, "On a *hsin-hai* day in the tenth month of the 25th year of Sŏnjo a 'guest star' appeared within *Thien-Tshang*. Another was seen on an *i-mao* day [2nd December] to the east of *Wang-Liang* and on a *ting-ssu* day in the 11th month [4th December] west of *Wang-Liang*, appearing until the second month of the following year (March, 1593). As for that within *Thien-Tshang*, its size only diminished on a *kêng-chhen* day in the first month of the *chia-wu* cyclical year (20th February, 1594)." (*Chŭngbo Munhŏn Pigo* 6/21b.)

The first "guest star" appears to be a nova and the second a comet.

(578) 30th July, 1593. (Gregorian Calendar.) "On an *i-mao* day in the seventh month of the 21st year [of the Wan-Li reign-period] a (*hui*) comet appeared at the *Tung-Ching* (22nd lunar mansion). On an *i-hai* day [19th August] it retrograded and entered the *Tzu-Wei* Enclosure, trespassing against *Hua-Kai*." (MS 27/12a; HWHTK 212/67b; MHY ch. 68; B; W338.)

The Korean says, "On a *jen-hsü* day in the seventh month of the 26th year of Sŏnjo [6th August] a (*hui*) comet appeared outside the *Tzu-Wei* (Enclosure). When it reached *Chhuan-Shê* it began to appear smaller. It went out of sight on a *ping-wu* day in the eighth month [19th September]." (*Chŭngbo Munhŏn Pigo* 6/28b.)

The Japanese records, "On the seventh day in the seventh month of the second year of the Bunroku reign-period [3rd August] a (*hui*) comet appeared at mid-night in the NW measuring 10 ft in length.

"It lasted until the 20th day [16th August]." (K.)

(579) 5th August, 1596. (Gregorian Calendar.) "On a *ting-chhou* day in the seventh month of the 24th year [of the Wan-Li reign-period] a (*hui*) comet like a pellet appeared in the NW. When it entered the *I* (27th lunar mansion) it measured over 1 ft. It was moving NW." (MS 27/12b; HWHTK 212/68a; MHY ch. 68; B; W339.)

The Korean says, "On a *kêng-shen* day in the sixth month of the 29th year of Sŏnjo [19th July] a (*hui*) comet appeared at the (*Tung*-)*Ching* (22nd lunar mansion). It was of the same

size as the large star in *Wu-Chhê* (i.e., Capella). On a *chia-wu* day in the seventh month [22nd August] it went out of sight." (*Chŭngbo Munhŏn Pigo* 6/28b.)

The Japanese records, "Between the fifth and the seventh month of the first year of the Keichō reign-period [May–August, 1596] a (*hui*) comet appeared at 10.00 to 21.00 hr at the NW. Some said that this happened during the last ten days of the sixth month. On the seventh day of the seventh month (the comet) was still visible." (K.)

(580) 2nd September, 1600. (Gregorian Calendar.) The Korean says, "On a *ping-yin* day in the seventh month of the 33rd year of Sŏnjo a (*hui*) comet was seen at *Chung-Thai*. Its rays gradually diminished when it had shifted inside the *Thai-Wei* (Enclosure) on a *hsin-mao* day [27th September]." (*Chŭngbo Munhŏn Pigo* 6/28b.)

(581) 14th December, 1600. (Gregorian Calendar.) The Korean says, "On an *i-yu* [probably *chi-yu*] day in the 11th month of the 33rd year of Sŏnjo a 'guest star' appeared at the *Wei* (sixth lunar mansion) larger than the *Huo-Hsing* in the *Hsin* (fifth lunar mansion) (i.e. Antares). Its colour was yellowish-red. It was scintillating. On a *ting-wei* day in the 12th month [no such date] the 'guest star' trespassed against Venus at the *Wei* (sixth lunar mansion)." (*Chŭngbo Munhŏn Pigo* 6/21b.)

### APPENDIX 1

*Korean comets in TAMURA's (1958) Catalogue.*  
(See our preceding Footnotes on pp. 132 & 135.)

| T =<br>Tamura-No. | Ho =<br>Ho-No. | Year | Remarks           | T =<br>Tamura-No. | Ho =<br>Ho-No. | Year | Remarks   |
|-------------------|----------------|------|-------------------|-------------------|----------------|------|-----------|
| 1                 | 56             | 49   | B.C.              | 30                | 183            | 400  |           |
| 2                 | 59             | 44   | B.C.              | 31                | 188            | 415  |           |
| 3                 | 64             | 4    | B.C.              | 32                | 192            | 419  |           |
| 4                 | 69             | 46   | A.D. from here on | 33                | 206            | 454  |           |
| 5                 | 70             | 54   |                   | 34                | 232            | 579  |           |
| 6                 | 72             | 59   |                   | 35                | 236            | 594  | see below |
| 7                 | 84             | 79   |                   | 36                | 245            | 640  |           |
| 8                 | 86             | 85   |                   | 37                | 248            | 647  |           |
| 9                 | 86             | 85   |                   | 38                | 252            | 669  | see below |
| 10                | 96             | 128  |                   | 39                | 252            | 669  | see below |
| 11                | 101            | 149  |                   | 40                | 253            | 672  |           |
| 12                | 103            | 153  |                   | 41                | 255            | 676  |           |
| 13                | 102            | 153  |                   | 42                | 257            | 683  |           |
| 14                | 104            | 158  |                   | 43                | missing        | 693  | see below |
| 15                | 108            | 182  |                   | 44                | 259            | 699  |           |
| 16                | 110            | 186  |                   | 45                | 260            | 701  |           |
| 17                | 116            | 204  |                   | 46                | 270            | 744  |           |
| 18                | 121            | 217  |                   | 47                | 272            | 759  |           |
| 19                | 141            | 260  |                   | 48                | 275            | 761  |           |
| 20                | 145            | 269  |                   | 49                | 276            | 764  |           |
| 21                | 157            | 299  |                   | 50                | 278            | 768  |           |
| 22                | 159            | 300  |                   | 51                | 279            | 770  |           |
| 23                | 161            | 302  |                   | 52                | 282            | 815  |           |
| 24                | 166            | 315  |                   | 53                | 290            | 836  |           |
| 25                | 168            | 336  |                   | 54                | 292            | 838  |           |
| 26                | 176            | 383  |                   | 55                | 302            | 867  | see below |
| 27                | 178            | 391  | see below         | 56                | 305            | 875  |           |
| 28                | 180            | 395  |                   | 57                | 322            | 908  |           |
| 29                | 184            | 400  |                   |                   |                |      |           |

#### Remarks:

T27 Ho (178) gives August 390 A.D.; TAMURA seems to have mistaken the year.

T35 Ho (236) gives early January 595 A.D.; TAMURA overlooks the fact that the end of the Eastern lunar year falls on the beginning of the Julian year.

T38 Ho (252) gives 668 A.D.; TAMURA seems to have confused the year.

T39 The same comet as Ho (252).






T43 20th July 693 A.D.; on the twelfth day in the sixth month of the second year of Hyoso Wang a (*hui*) comet appeared in the East. On the seventeenth day (25th July) it appeared in the West; (TAMURA No. 43).

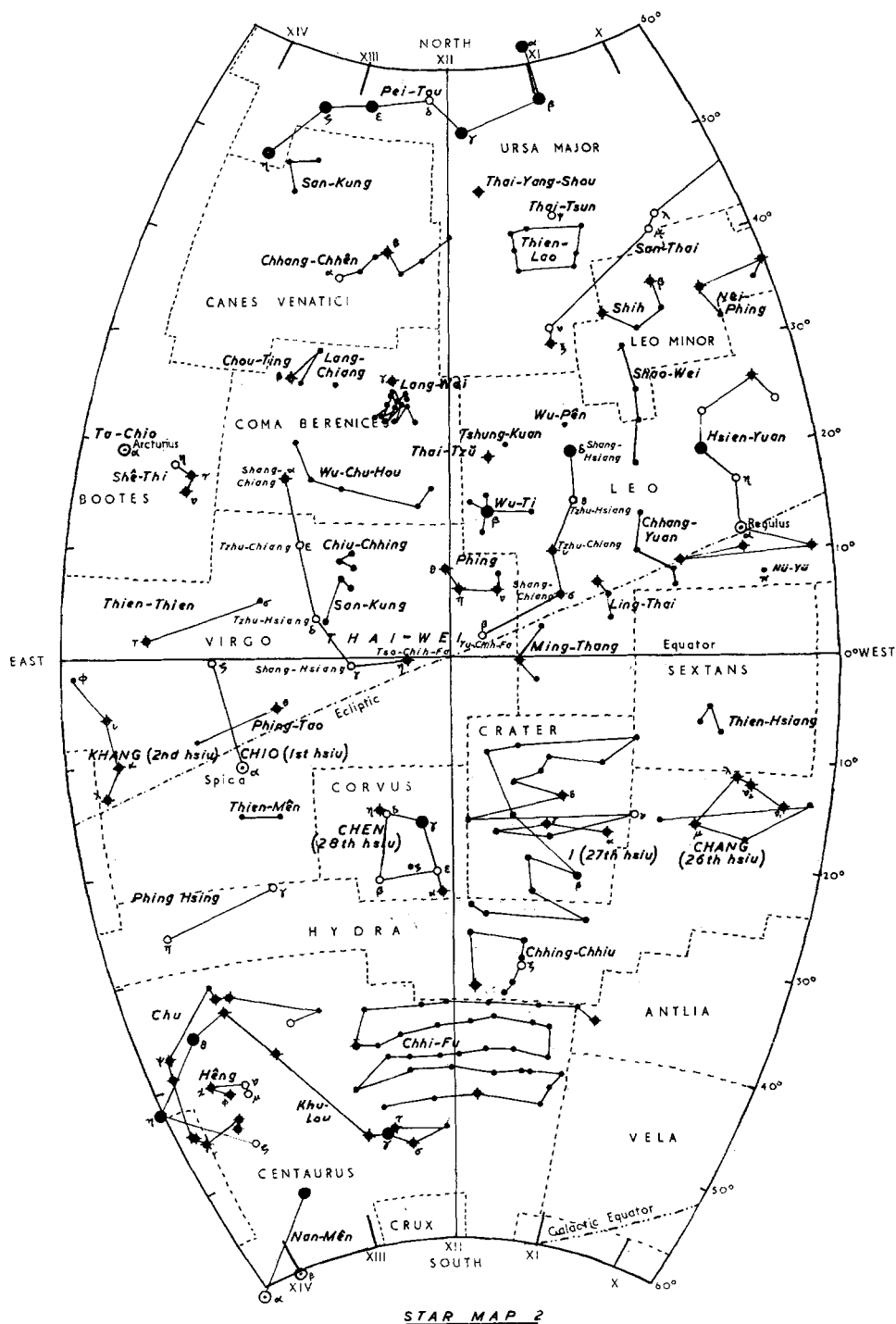
T55 Ho (302) gives January 868 A.D.; see Remark for T35.

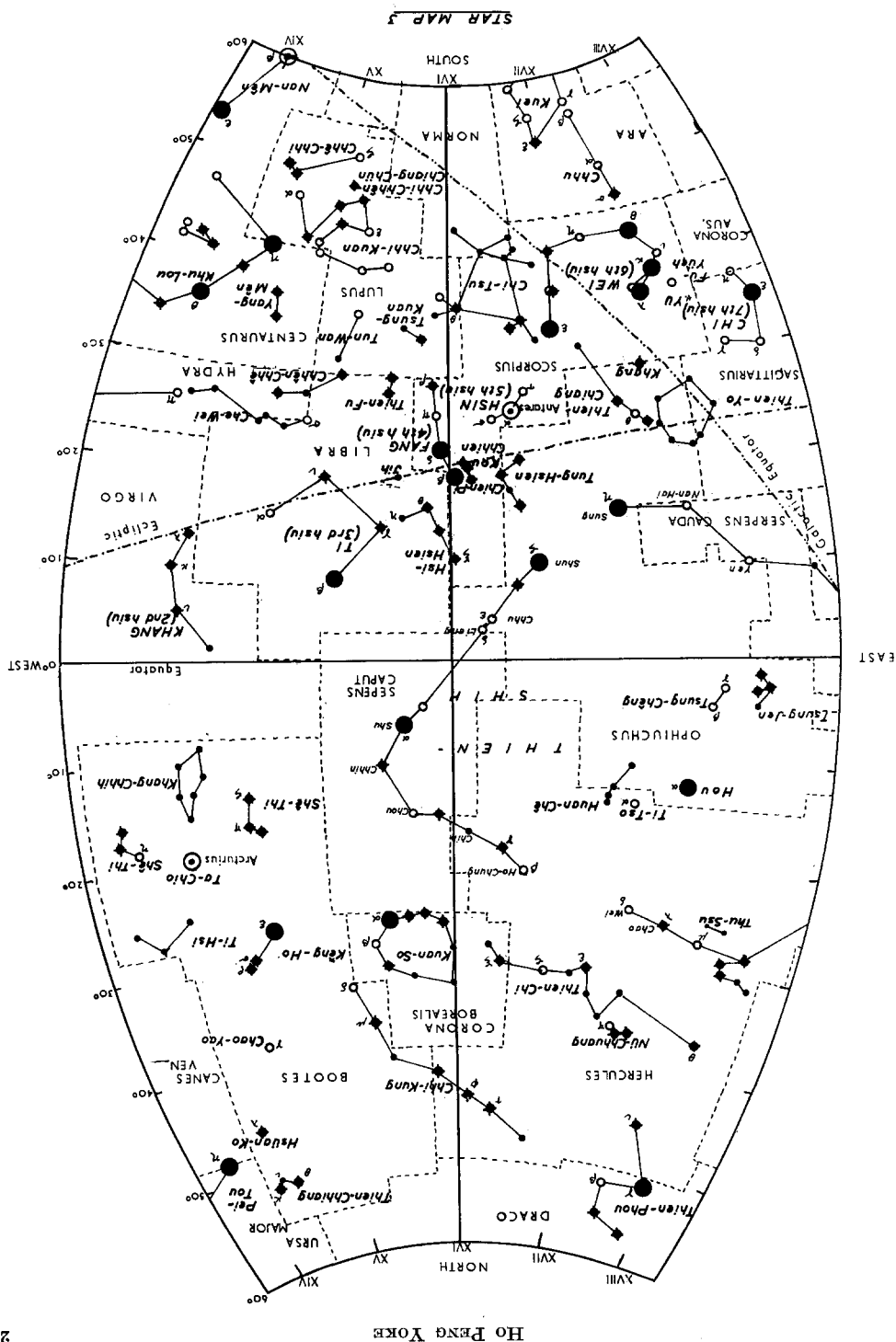


STAR MAP 1

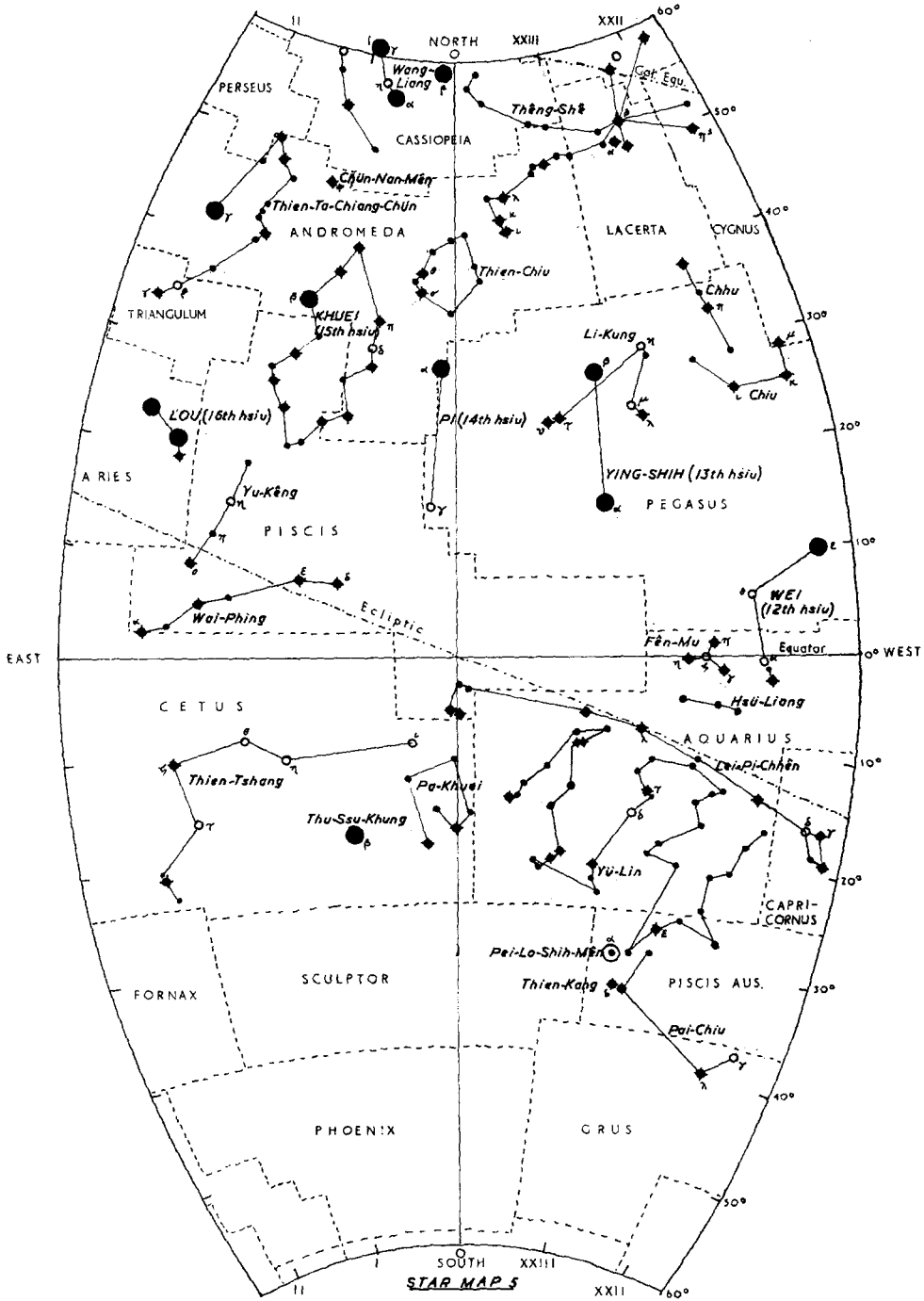
## STELLAR MAGNITUDES

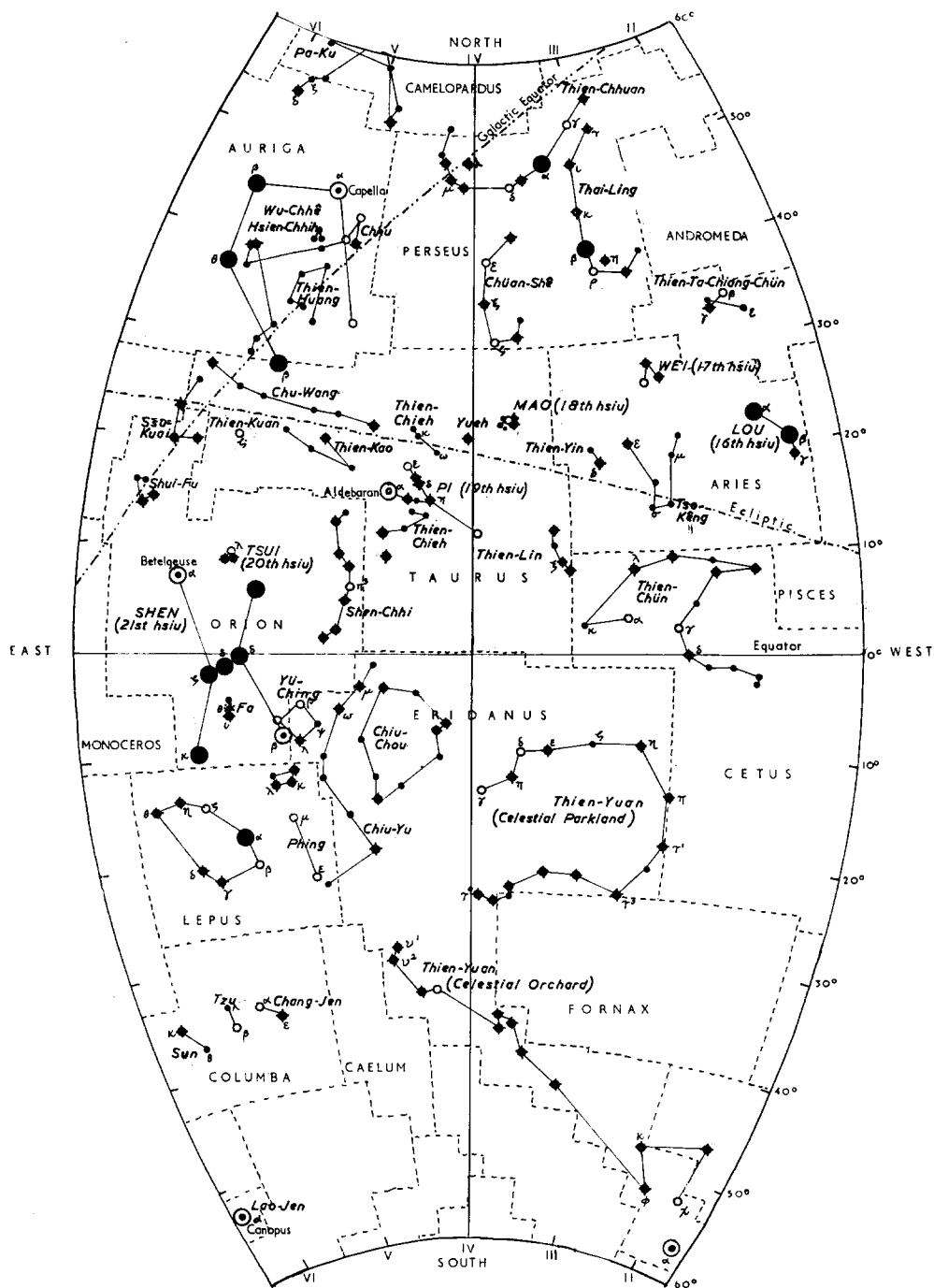
- |   |             |
|---|-------------|
|  | 1 and above |
|  | 2 and 2½    |
|  | 3 and 3½    |
|  | 4 and 4½    |
|  | 5 and under |

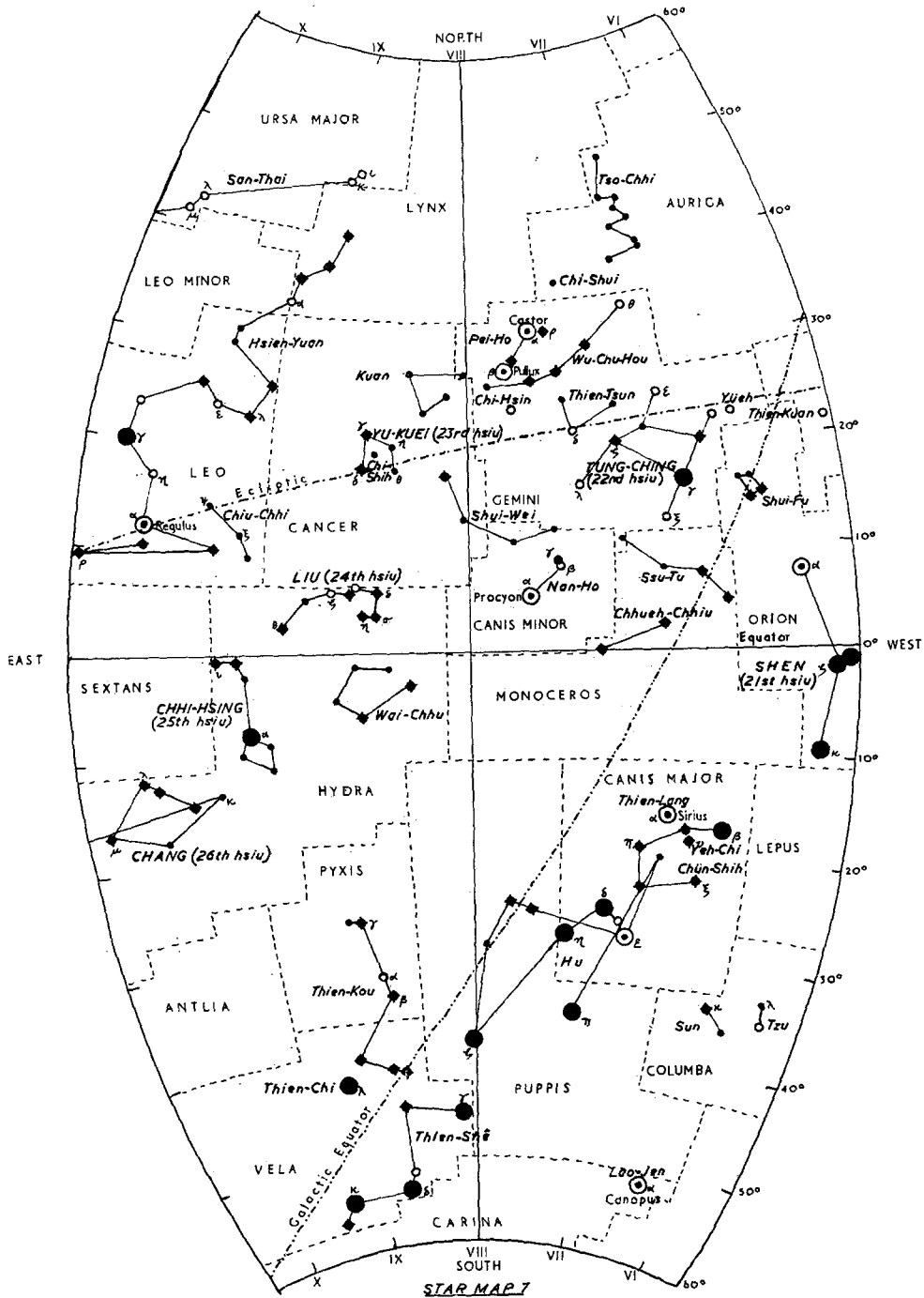












## APPENDIX 3

*Index for the identification of stars or asterisms*

| Stars or Asterisms                     | Position in modern constellations           | Star Map No. | Stars or Asterisms                                 | Position in modern constellations   | Star Map No. |
|--|---|--------------|--|-------------------------------------|--------------|
| <i>Chang</i> (26th lunar mansion)      | Hydra                                       | 2, 7         | <i>Ho-Ku</i>                                       | Altair and others                   | 4            |
| <i>Chang-Jen</i>                       | Columba                                     | 6            | <i>Ho-Shu</i> (= <i>Nan-Ho</i> and <i>Pei-Ho</i> ) | Canis Minor and Gemini              | 7            |
| <i>Chao-Yao</i>                        | Bootes                                      | 3            | <i>Hou</i>   | Ophiuchus                           | 3            |
| <i>Che-Wei</i>                         | Hydra                                       | 3            | <i>Hou-Hsing</i>                                   | Regulus                             | 2, 7         |
| <i>Chen</i> (28th lunar mansion)       | Corvus                                      | 2            | <i>Hsi-Chung</i>                                   | Cygnus                              | 4            |
| <i>Chi</i> (7th lunar mansion)         | Sagittarius                                 | 3, 4         | <i>Hsi-Hsien</i>                                   | Libra                               | 3            |
| <i>Chi-Hsin</i>                        | $\kappa$ Gem                                | 7            | <i>Hsia-Thai</i>                                   | $\nu$ and $\xi$ UMa                 | 2            |
| <i>Chi-Shih</i>                        | Cancer                                      | 7            | <i>Hsien-Chhih</i>                                 | Auriga                              | 6            |
| <i>Chi-Shui</i>                        | Auriga                                      | 7            | <i>Hsien-Yuan</i>                                  | Leo                                 | 2, 7         |
| <i>Chi-Tsu</i>                         | Scorpius                                    | 3            | <i>Hsin</i> (fifth lunar mansion)                  | Antares and others                  | 3            |
| <i>Chien-Pi</i>                        | Scorpius                                    | 3            | <i>Hsing-Chhen</i>                                 | possibly Leo                        | 2, 7         |
| <i>Chien-Thai</i>                      | Lyra  | 4            | <i>Hsü</i> (11th lunar mansion)                    | Aquarius                            | 4            |
| <i>Chien-Hsing</i>                     | Sagittarius                                 | 4            | <i>Hsü-Liang</i>                                   | Aquarius                            | 5            |
| <i>Chih-Nü</i>                         | Vega and others                             | 4            | <i>Hsü-Nü</i> (tenth lunar mansion)                | Aquarius                            | 4            |
| <i>Chio</i> (first lunar mansion)      | Spica and $\zeta$ Vir                       | 2            | <i>Hsüan-Ko</i>                                    | Bootes                              | 3            |
| <i>Chiu-Chou</i>                       | Eridanus                                    | 6            | <i>Hu</i>  | Puppis, Canis Major                 | 7            |
| <i>Chiu-Chhi</i>                       | Leo   | 7            | <i>Hu-Kua</i>                                      | Delphinus                           | 4            |
| <i>Chiu-Chhang</i>                     | Virgo                                       | 2            | <i>Hua-Kai</i>                                     | Cassiopeia                          | 1            |
| <i>Chiu-Yu</i>                         | Eridanus                                    | 6            | <i>Huan-Ché</i>                                    | Ophiuchus, Hercules                 | 3            |
| <i>Chüan-Shé</i>                       | Perseus                                     | 6            | <i>Huan-Wei</i>                                    | possibly $\pi$ Cep and $\alpha$ Cam | 1            |
| <i>Chkuan-Shé</i>                      | Cassiopeia                                  | 1            | <i>I</i> (27th lunar mansion)                      | Crater                              | 2            |
| <i>Chou-Ting</i>                       | Coma Berenices                              | 2            | <i>Jen-Hsing</i>                                   | Pegasus                             | 4            |
| <i>Chu</i>                             | Centaurus                                   | 2            | <i>Jih</i> ("solar star")                          | $\kappa$ Lib                        | 3            |
| <i>Chu-Hsia-Shih</i>                   | Draco                                       | 1            | <i>Kang-Hsing</i>                                  | Cassiopeia                          | 1            |
| <i>Chu-Wang</i>                        | Taurus                                      | 6            | <i>Kéng-Ho</i>                                     | Bootes                              | 3            |
| <i>Chung-Thai</i>                      | $\lambda$ and $\mu$ UMa                     | 2, 7         | <i>Khang</i>                                       | Ophiuchus                           | 3            |
| <i>Chün-Mên</i>                        | possible two stars in Hydra                 |              | <i>Khang</i> (second lunar mansion)                | Virgo                               | 3, 2         |
| <i>Chün-Nan-Mên</i>                    | Andromeda                                   | 5            | <i>Khang-Chhi</i>                                  | Bootes                              | 3            |
| <i>Chün-Shih</i>                       | Canis Major                                 | 7            | <i>Khuei</i> (15th lunar mansion)                  | Andromeda, Pisces                   | 5            |
| <i>Chhang-Chhen</i>                    | Canes Venatici                              | 2            | <i>Ko-Tao</i>                                      | Cassiopeia                          | 1            |
| <i>Chhang-Ho-Mên</i>                   | space between Camelopardus and $\gamma$ Cep | 2            | <i>Kou</i>   | Sagittarius                         | 4            |
| <i>Chhang-Yuan</i>                     | Leo   | 2            | <i>Kou-Chhen</i>                                   | Ursa Minor                          | 1            |
| <i>Chhen-Chhé</i>                      | Libra, Hydra                                | 3            | <i>Kou-Chhien</i>                                  | Scorpius                            | 3            |
| <i>Chhé-Chhi</i>                       | Lupus                                       | 3            | <i>Kou-Hsing</i>                                   | Cepheus                             | 1            |
| <i>Chhi</i>                            | Aquarius                                    | 4            | <i>Kou-Kuo</i>                                     | Sagittarius                         | 4            |
| <i>Chhi-Chhen-Chiang-Chün</i>          | Lupus                                       | 3            | <i>Kuan</i>  | Cancer                              | 7            |
| <i>Chhi-Fu</i>                         | Centaurus                                   | 2            | <i>Kuan-So</i>                                     | Corona Borealis                     | 3            |
| <i>Chhi-Hsing</i> (25th lunar mansion) | Hydra                                       | 7            | <i>Kuei</i>  | Ara                                 | 3            |
| <i>Chhi-Kuan</i>                       | Lupus                                       | 3            | <i>Khu-Hsing</i>                                   | Aquarius                            | 4            |
| <i>Chhi-Kung</i>                       | Hercules, Bootes                            | 3            | <i>Khu-Lou</i>                                     | Centaurus                           | 2, 3         |
| <i>Chhien-Nü</i> (ninth lunar mansion) | Capricornus                                 | 4            | <i>Lang</i> (= <i>Thien-Lang</i> )                 | Sirius                              | 7            |
| <i>Chhing-Chhiu</i>                    | Hydra                                       | 2            | <i>Lang-Chiang</i>                                 | Coma Berenices                      | 2            |
| <i>Chhu</i>                            | Ara;  | 3            | <i>Lang-Wei</i>                                    | Coma Berenices                      | 2            |
|  | also Auriga                                 | 6            | <i>Lao-Jen</i>                                     | Canopus                             | 6, 7         |
| <i>Chhuch-Chhiu</i>                    | Monoceros                                   | 7            | <i>Lei-Pi-Chen</i>                                 | Capricornus, Aquarius               | 4, 5         |
| <i>Fa</i>                              | Orion;                                      | 6            | <i>Li-Chu</i>                                      | Aquila                              | 4            |
|  | also = $\delta$ UMa                         | 2            | <i>Li-Kung</i>                                     | Pegasus                             | 5            |
| <i>Fa-Hsing</i>                        | Mars  |              | <i>Liang</i>                                       | $\delta$ Oph                        | 3            |
| <i>Fang</i> (ninth lunar mansion)      | Scorpius                                    | 3            | <i>Lieh-Ssu</i>                                    | $\lambda$ and 21 Ser                | 3, 4         |
| <i>Fén-Mu</i>                          | Aquarius                                    | 4, 5         | <i>Ling-Thai</i>                                   | Leo                                 | 2            |
| <i>Fu-Kuang</i>                        | Draco                                       | 1, 4         | <i>Liu</i> (24th lunar mansion)                    | Hydra                               | 7            |
| <i>Fu-Yüeh</i>                         | Scorpius                                    | 3            | <i>Lo-Yen</i>                                      | Capricornus                         | 4            |
| <i>Héng</i>                            | Centaurus                                   | 2            | <i>Lou</i> (16th lunar mansion)                    | Aries                               | 5, 6         |
| <i>Ho-Chien</i>                        | $\gamma$ Her                                | 3            |  |                                     |              |



| Stars or Asterisms                    | Position in modern constellations | Star Map No. | Stars or Asterisms                        | Position in modern constellations | Star Map No. |
|---------------------------------------|-----------------------------------|--------------|---|-----------------------------------|--------------|
| <i>Lu-Chia</i>                        | Camelopardus                      | 1            | <i>Ta-Huo</i> (= <i>Hsin</i> )            | Antares                           | 3            |
| <i>Mao</i> (18th lunar mansion)       | the Pleiades                      | 6            | <i>Ta-Liang</i>                           | the Pleiades                      | 6            |
| <i>Ming-Thang</i>                     | Leo                               | 2            | <i>Ta-Ling</i>                            | Perseus                           | 6            |
| <i>Nan-Ho</i>                         | Canis Minor                       | 7            | <i>Thai-I</i>                             | Draco                             | 1            |
| <i>Nan-Mên</i>                        | Centaurus                         | 2, 3         | <i>Thai-Tsun</i>                          | Ursa Major                        | 2            |
| <i>Nan-Tou</i> (eighth lunar mansion) | Sagittarius                       | 4            | <i>Thai-Tzu</i>                           | Leo;                              | 2            |
| <i>Nei-Chhieh</i>                     | Ursa Major                        | 1            |   | also $\gamma$ UMi                 | 1            |
| <i>Nei-Chhu</i>                       | Draco                             | 1            | <i>Thai-Yang</i> (= <i>Jih</i> )          | $\kappa$ Lib                      | 3            |
| <i>Nei-Phing</i>                      | Leo Minor                         | 2            | <i>Thai-Yang-Shou</i>                     | Ursa Major                        | 2            |
| ( <i>Nei-</i> ) <i>Wu-Chu-Hou</i>     | Coma Berenices                    | 2            | <i>Thai-Wei</i> Enclosure                 | Coma Berenices,                   | 2            |
| <i>Nien-Tao</i>                       | Cygnus, Lyra                      | 3            |   | Virgo, Leo                        |              |
| <i>Nü-Chhuang</i>                     | Hercules                          | 4            | <i>Ti</i> (third lunar mansion)           | Libra                             | 3            |
| <i>Nü-Shih</i>                        | Draco                             | 1            | <i>Ti-Hsi</i>                             | Bootes                            | 3            |
| <i>Nü-Yü</i>                          | $\pi$ Leo                         | 2            | <i>Ti-Tso</i>                             | Hercules                          | 3            |
| <i>Nü-Yü-Kung</i>                     | Draco                             | 1            | <i>Thêng-Shê</i>                          | Lacerta, Cassiopeia,              | 5, 1         |
| <i>Nung-Chang-Jen</i>                 | Sagittarius                       | 4            |   | Andromeda                         |              |
| <i>Pa-Ku</i>                          | Camelopardus,                     | 1, 6         | <i>Thien-Chi</i> ("Celestial Discipline") | Hercules                          | 3            |
|                                       | Auriga                            |              | <i>Thien-Chi</i> ("Celestial Fowl")       | Sagittarius                       | 4            |
| <i>Pa-Khuei</i>                       | Cetus                             | 5            | <i>Thien-Chi</i> ("Celestial Plan")       | Vela;                             | 7            |
| <i>Pai-Kua</i>                        | Delphinus                         | 4            |   | also = <i>Nan-Tou</i>             | 4            |
| <i>Pei-Chi</i>                        | Ursa Minor                        | 1            |   | (Sagittarius)                     |              |
| <i>Pei-Ho</i>                         | Gemini                            | 7            | <i>Thien-Chieh</i>                        | Taurus                            | 6            |
| <i>Pei-Lo-Ssu-Mên</i>                 | Piscis Austrinus                  | 5            | <i>Thien-Chiang</i>                       | Ophiuchus                         | 3            |
| <i>Pei-Tou</i>                        | the Plough; Ursa Major            | 1, 2         | <i>Thien-Chin</i>                         | Cygnus                            | 4            |
| <i>Pi</i> (19th lunar mansion)        | Taurus                            | 6            | <i>Thien-Chiu</i>                         | Andromeda                         | 5            |
| <i>Phing-Hsing</i> ("Justice")        | Hydra                             | 2            | <i>Thien-Chu</i>                          | Draco, Cepheus                    | 1            |
| <i>Phing-Hsing</i> ("Screen")         | Virgo                             | 2            | <i>Thien-Chhu</i>                         | Draco                             | 1            |
| <i>Phing-Tao</i>                      | Virgo                             | 2            | <i>Thien-Chün</i>                         | Cetus                             | 6            |
| <i>Pieh</i>                           | Corona Australis                  | 4            | <i>Thien-Chhian</i>                       | Bootes                            | 3, 1         |
| <i>San-Kung</i>                       | Canes Venatici;                   | 2            | <i>Thien-Chhuan</i>                       | Perseus                           | 6            |
|                                       | also Virgo                        | 2            | <i>Thien-Chhuang</i>                      | Ursa Minor, Draco                 | 1            |
| <i>San-Nêng</i> (= <i>San-Thai</i> )  | Ursa Major                        | 2, 7         | <i>Thien-Fu</i>                           | Libra;                            | 3            |
| <i>San-Thai</i>                       | Ursa Major                        | 2, 7         |   | Aquila                            | 4            |
| <i>Shang-Chiang</i>                   | $\alpha$ Coma Berenices;          | 2            | <i>Thien-Hsiang</i>                       | Sextans                           | 2            |
|                                       | also $\sigma$ Leonis              | 2            | <i>Thien-Huang</i>                        | Auriga                            | 6            |
| <i>Shang-Khai</i>                     | $\iota$ and $\kappa$ UMa          | 7            | <i>Thien-Huang-Ta-Ti</i>                  | 32 Dra                            | 1            |
| (= <i>Shang-Thai</i> )                |                                   |              | <i>Thien-I</i>                            | Draco                             | 1            |
| <i>Shang-Hsiang</i>                   | Zosma;                            | 2            | <i>Thien-Kang</i>                         | Piscis Austrinus                  | 5            |
|                                       | also $\delta$ Leonis              | 2            | <i>Thien-Kao</i>                          | Taurus                            | 6            |
| <i>Shang-Shu</i>                      | UMa IXh 201 Piazzi                | 1            | <i>Thien-Kou</i>                          | Pyxis                             | 7            |
| <i>Shang-Thai</i>                     | $\iota$ and $\kappa$ UMa          | 7            | <i>Thien-Kuan</i>                         | Taurus                            | 6            |
| <i>Shang-Tsai</i>                     | $\iota$ Dra                       | 1            | <i>Thien-Lang</i>                         | Sirius                            | 6            |
| <i>Shao-Fu</i>                        | $\zeta$ Dra;                      | 1            | <i>Thien-Lao</i>                          | Ursa Major                        | 2            |
|                                       | also 24 UMa                       | 1            | <i>Thien-Lai</i> (- <i>Chhêng</i> )       | Capricornus                       | 4            |
| <i>Shao-Tsai</i>                      | $\theta$ Dra                      | 1            | <i>Thien-Lin</i>                          | Taurus                            | 6            |
| <i>Shao-Wei</i>                       | Canis Minor, Leo                  | 2            | <i>Thien-Mên</i>                          | Virgo                             | 2            |
| <i>Shê-Thi</i>                        | Bootes                            | 3, 2         | <i>Thien-Miao</i>                         | possibly in Argo,                 | 7            |
| <i>Shen</i> (21st lunar mansion)      | Orion                             | 6            |   | Hydra;                            |              |
| <i>Shen-Chhi</i>                      | Orion                             | 6            | <i>Thien-Pien</i>                         | Aquila, Scutum                    | 4            |
| <i>Shih</i>                           | Leo Minor                         | 2            | <i>Thien-Phou</i>                         | Draco                             | 3, 1         |
| <i>Sun</i> ("Grandson")               | Columba                           | 6, 7         | <i>Thien-Shê</i>                          | Vela                              | 7            |
| <i>Shui-Fu</i>                        | Orion                             | 6, 7         | <i>Thien-Shih</i> Enclosure               | Hercules, Aquila,                 | 3, 4         |
| <i>Ssu-Fei</i>                        | Equuleus                          | 4            |   | Serpens Cauda,                    |              |
| <i>Ssu-Fu</i>                         | Camelopardus,                     | 1            |   | Ophiuchus,                        |              |
|                                       | Draco                             |              | <i>Thien-Ta-Chiang-Chün</i>               | Serpens Caput                     |              |
| <i>Ssu-Kuai</i>                       | Orion                             | 6            |   | Andromeda                         | 5, 6         |
| <i>Ssu-Tu</i>                         | Monoceros                         | 7            | <i>Thien-Thien</i>                        | Virgo;                            | 2            |
| <i>Ssu-Wei</i>                        | Equuleus                          | 4            |   | also Capricornus                  | 4            |
| <i>Ta-Chhen</i> (= <i>Hsin</i> )      | Antares                           | 3            | <i>Thien-Tsun</i>                         | Gemini                            | 7            |
| (= <i>Shen</i> )                      | Orion; also                       | 6            | <i>Thien-Tshang</i>                       | Cetus                             | 5            |
|                                       | Polaris                           | 1            | <i>Thien-Yin</i>                          | Aries                             | 6            |
| <i>Ta-Chio</i>                        | Arcturus                          | 3            | <i>Thien-Yo</i>                           | Ophiuchus,                        | 3            |
|                                       |                                   |              |   | Sagittarius                       |              |

| Stars or Asterisms  | Position in modern constellations      | Star Map No. | Stars or Asterisms                    | Position in modern constellations          | Star Map No. |
|---|--|--------------|---------------------------------------|--|--------------|
| <i>Thien-Yuan</i><br>("Celestial Orchard")                | Eridanus                               | 6            | <i>Wai-Phing</i>                      | Pisces                                     | 5            |
| <i>Thien-Yuan</i><br>("Celestial Parkland<br>or Pasture") | Eridanus                               | 6            | <i>Wang-Liang</i>                     | Cassiopeia                                 | 1, 5         |
| <i>Thien-Yü</i>   | $\mu$ , $\omega$ and $\theta$ Fornacis | 6            | <i>Wei</i> (sixth lunar mansion)      | Scorpius                                   | 3            |
| <i>Tsao-Fu</i>  | Cepheus                                | 1            | <i>Wei</i> (12th lunar mansion)       | Pegasus                                    | 4, 5         |
| <i>Tsung-Kuan</i>   | Leo                                    | 2            | <i>Wei</i> (17th lunar mansion)       | Aries                                      | 6            |
| <i>Tso-Chih-Fa</i>  | $\eta$ Vir                             | 2            | <i>Wên-Chhang</i>                     | Ursa Major                                 | 1            |
| <i>Tso-Chio</i>   | $\zeta$ Vir                            | 2            | <i>Wu-Chu-Hou</i>                     | Gemini                                     | 7            |
| <i>Tso-Chhi</i>   | Sagitta                                | 4            | ( <i>Nei</i> .) <i>Wu-Chu-Hou</i>     | Coma Berenices                             | 2            |
| <i>Tso-Chhi</i>   | Auriga                                 | 7            | <i>Wu-Chhé</i>                        | Auriga                                     | 6            |
| <i>Tso-Hsia</i>   | $\kappa$ Cor                           | 2            | <i>Wu-Nü</i> (= <i>Hsü-Nü</i> )       | Aquarius                                   | 4            |
| <i>Tso-I-Mên</i>  | between $\eta$ Vir and $\gamma$ Vir    | 2            | <i>Wu-Pên</i>                         | Leo  | 2            |
| <i>Tso-Kêng</i>   | Aries                                  | 6            | <i>Wu-Ti</i> (- <i>Tso</i> )          | Leo  | 2            |
| <i>Tso-Shê-Thi</i>  | $\pi$ Boo and others                   | 3            | <i>Wu-Ti</i> (- <i>Nei-Tso</i> )      | Cepheus                                    | 1            |
| <i>Tsui</i> (- <i>Hsi</i> ) (20th lunar mansion)          | Orion                                  | 6            | <i>Yang-Mên</i>                       | Centaurus                                  | 3            |
| <i>Tsung-Chêng</i>  | Ophiuchus                              | 3            | <i>Yeh-Chi</i>                        | Canis Major                                | 7            |
| <i>Tsung-Hsing</i>  | Hercules                               | 4            | <i>Yin-Tê</i>                         | Draco                                      | 1            |
| <i>Tsung-Jen</i>  | Ophiuchus                              | 3            | <i>Ying-Shih</i> (13th lunar mansion) | Pegasus                                    | 5            |
| <i>Tung-Ching</i> (22nd lunar mansion)                    | Gemini                                 | 7            | <i>Yu-Chio</i>                        | Spica                                      | 2            |
| <i>Tung-Hsien</i>   | Ophiuchus                              | 3            | <i>Yu-Chhi</i>                        | Aquila                                     | 4            |
| <i>Tung-Pi</i> (14th lunar mansion)                       | Pegasus                                | 5            | <i>Yu-I-Mên</i>                       | space between $\beta$ Vir and $\sigma$ Leo | 2            |
| <i>Thu-Ssu</i>  | 87 and 89 Her                          | 3            | <i>Yu-Kêng</i>                        | Piscis                                     | 5            |
| <i>Thu-Ssu-Khung</i>                                      | Cetus                                  | 5            | <i>Yu-Shê-Thi</i>                     | $\eta$ , $\tau$ and $\nu$ Boo              | 2            |
| <i>Tzu</i> ("Son")  | Columba                                | 6, 7         | <i>Yü</i>                             | Scorpius;                                  | 3            |
| <i>Tzu-Wei</i> Enclosure                                  | Draco, Ursa Minor, Camelopardus        | 1            | <i>Yü-Ching</i>                       | Sagittarius                                | 4            |
| <i>Tzhu-Chiang</i>  | $\epsilon$ Vir; $\iota$ Leo            | 2            | <i>Yü-Kuei</i> (23rd lunar mansion)   | Orion                                      | 6            |
| <i>Wai-Chhu</i>   | Hydra                                  | 7            | <i>Yü-Lin</i>                         | Cancer                                     | 7            |
|   |  |              | <i>Yüeh</i>                           | Aquarius                                   | 5            |
|   |  |              |                                       | Gemini                                     | 7            |

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