

The following 2-page table is a fuller version of that published in the *Proceedings of the Journées 2008* that was held in Dresden in September 2008. It is a list of references and other standard information used in *The Astronomical Almanac* (AsA) and in particular taken from the 2009 edition. The list is not guaranteed to be complete. Much of the information does not change from year to year. However, it is wise to check the latest almanac for the most up-to-date references. At the end there is a list of the full titles of the various references, together with the acronyms used.

| Quantity   |  | Reference, Comment  |
|--|--|---|
| Reference systems: ICRS<br>BCRS, GCRS  | IAU 1997<br>IAU 2000   | Resolution B2, <i>Trans. IAU</i> , <b>XXIII</b> B.<br>Resolutions B1.3 and B1.4 <i>Trans. IAU</i> , <b>XXIV</b> B.  |
| Time scales: TAI<br>TT<br>TDB<br>Standard epoch; century; day; secs  | IAU 1967<br>IAU 2000<br>IAU 2006<br>IAU 1976                             | Adopted 1971.<br>Resolution B1.9, TT = TAI + 32 <sup>s</sup> 184.<br>Resolution B3.<br>J2000-0, JD2451545-0 TT, 2000 Jan. 1 12 <sup>h</sup> TT, Julian cy=36525 <sup>d</sup> , day of 86400 <sup>s</sup> .  |
| Planetary & lunar ephemerides<br>T <sub>eph</sub><br>Light time, unit distance<br>Categorizing Pluto<br>Minor planet ephemerides<br>Mean elements of planets   | 1998<br>1998<br><br>IAU 2006<br>1999<br>1994                             | JPL DE405/LE405 ephemerides Standish, E.M., JPL IOM 312.F-98-048.<br>Standish, E.M., A&A, <b>336</b> , 381-384.<br>$\tau_A = 499.0047838061 \text{ ms}^{-1}$ TDB compatible, $c\tau_A = 149597870691 \text{ m}$ .<br>Resolutions 5 & 6; Pluto is a dwarf planet.<br>USNO AE98, Hilton, J.L., AJ, <b>117</b> , 1077, for “largest” fifteen; remainder AE2001.<br>Simon., J.L., <i>et al.</i> , A&A, <b>282</b> , 663.  |
| Physical ephemerides, . . .<br>Sun, Planets and Pluto;<br>and for Sun<br><br>Radius of the Earth<br><br>Radius of the Moon<br>Lunar librations<br>(but using IAU inclination)  | IAU 2006<br><br>1863<br>1992<br>IAG 1999<br><br>IAU 2006<br>1981<br>1982 | IAU/IAG Working Group on Cartographic Coordinates & Rotational Elements, Report 10, Seidelmann, P.K., <i>et al.</i> , <i>Celest. Mech.</i> , <b>98</b> , 155-180, 2007.<br>Carrington, R.C., <i>Observations of the Spots of the Sun</i> , p. 244, and updated by Seidelmann P.K., <i>et al.</i> , <i>Explanatory Supplement to the AsA</i> , p. 397.<br>$a_e = 6378.1366 \text{ km}$ , GA XXII, Special Commission SC3, Fundamental Constants, Groten, E., <i>Geodesists Handbook 2000</i> , and “Parameters of Common Relevance of Astronomy, Geodesy, and Geodynamics”, <i>J. Geod.</i> , <b>74</b> , 134-140.<br>$r_m = 1737.4 \text{ km}$ ; WGCCRE Report 10 (see above).<br>Eckhardt, D., <i>The Moon and the Planets</i> , <b>25</b> , 3; “High Precision Earth Rotation & Earth-Moon Dynamics”, ed. Calame, O., 193-198. IAU $I = 1^\circ 32' 32''.7$ . |
| Earth rotation angle / UT1<br>GMST / UT1<br>Equation of Origins  | IAU 2000<br>IAU 2006<br>IAU 2006   | Resolution B1.8, <i>Trans. IAU</i> , <b>XXIV</b> B.<br>Capitaine, N., Wallace, P.T., and Chapront, J., A&A, <b>432</b> , 355-367, 2005.<br>IAU Working Group on Nomenclature, <i>Trans IAU</i> , <b>XXVIB</b> .   |
| Precession; variety of angles;<br>$\epsilon_A, \psi_J, \phi_J, \gamma_J, \chi_A, \omega_A, \psi_A, \epsilon_0$<br>$z_A, \theta_A, \zeta_A$<br>Nutation $\Delta\psi, \Delta\epsilon$<br><br>adjustments at the $\mu$ s level<br>CIP & CIO Locator; $X, Y, \& s$ | IAU 2006<br><br>IAU 2000A<br><br>IAU 2006<br>IAU 2006                    | Resolution B1, Hilton, J.L., <i>et al.</i> , <i>Celest. Mech.</i> , <b>94</b> , 351-367, 2006,<br>P03: Capitaine, N., Wallace, P.T., & Chapront, J., A&A, <b>412</b> , 567-586, 2003, and Wallace, P.T., and Capitaine, N., A&A, <b>459</b> , 981-985, 2006.<br>Resolution B1.6, <i>Trans. IAU</i> , <b>XXIV</b> B. Implementations:<br>IERS Conventions 2003, <i>Technical Note 32</i> , eds. McCarthy, D.D. & Petit, G., <i>USNO Circular 179</i> , Kaplan, G., 2005, and IAU-SOFA routine NUT00A.<br>Resolution B1: due to IAU 2006 precession, included by IAU-SOFA in NUT06A.<br>Resolution B1 & B2. Capitaine, N., & Wallace, P.T., A&A, <b>450</b> , 855-872, 2006.  |
| Positions<br><br>Stars space motion<br><br>Transit times<br>Magnitudes: Mercury & Venus<br>Mars - Pluto<br>Minor planets   | <br><br><br>2005<br>1961   | Apparent (not intermediate) places tabulated at 0 <sup>h</sup> TT.<br>Minor planets and Pluto astrometric positions tabulated at 0 <sup>h</sup> TT.<br>No light time included; NOVAS v3 includes simple light time formulation.<br>IAU-SOFA uses Stumpff, P., A&A <b>144</b> , 232-240, 1985.<br>Transit over the ephemeris meridian.<br>Hilton, J.L., AJ, <b>129</b> , 2902, 2005, AJ, <b>130</b> , 2928.<br>Harris, D.L., <i>Planets &amp; Satellites</i> , eds. Kuiper, G.P. & Middlehurst, B.L., 272.<br>H & G parameters, <i>Minor Planet Ephemerides</i> , Institute of Applied Astronomy.  |
| Eclipses<br><br>Lunar radius   | IAU 1982<br>1963<br><br>IAU 1976   | $k = 0.2725076$ , Moon’s apparent SD= $\sin^{-1}(k \sin \pi)$ , consistent with Watts datum, <i>APAE</i> , <b>XVII</b> ,<br>$r_m = 1737.97 \text{ km}$ .<br>Sun’s SD at 1 au 15’ 59’’64.<br>Radius of shadow increased by 2% to allow for the atmosphere.   |
| Phenomena:<br>Rise/Set phenomena<br>Civil and Nautical Twilight<br>Astronomical Twilight<br>Phases of Moon, Lunation<br>Occultations   | IAU C4<br>1937<br>1928<br>1933<br>IAU 1982                               | Nearest minute of time. Upper limb on the horizon with 34’ of refraction.<br>Zenith distance 96° and 102° respectively.<br>Zenith distance 108°, called morning and evening twilight.<br>Brown, E. W., MNRAS, <b>93</b> , 603. No. 1 - 1923 January 16.<br>$k = 0.2725076$ , as for eclipses, see above.  |

| Quantity                           |            | Reference, Comment  |
|------------------------------------|------------|---|
| Stellar Catalogues:                |            |   |
| ICRS star catalogues               | ESA, USNO  | Hipparcos, Tycho-2, UCAC2, USNO-B.  |
| Bright Stars                       |            | Bright Star Catalog, FK5, Hipparcos.  |
| Double Stars                       | WDS        | Mason, B.D., <i>et al.</i> , AJ, <b>122</b> , 3466, 2001 plus updates.                                  |
| UBVRI Standards                    | Landolt    | Landolt, A., AJ, <b>104</b> , 340, 1992.  |
| uvby and H $\beta$                 |            | Perry, C.L., Olsen, E.H., & Crawford, D.L., PASP, <b>99</b> , 1184, 1987.                               |
| Radial Velocity Standards          | IAU C 30   | Working Group on Radial Velocity Standards.   |
| Variable Stars                     | AAVSO      | General Catalogue of Variable Stars and supplemental data.  |
| Bright Galaxies                    | Corwin     | 3 <sup>rd</sup> Reference Catalog of Bright Galaxies.   |
| Open Clusters                      |            | Dias, W.S., <i>et al.</i> , A&A, <b>389</b> , 871, 2002 plus updates.                                   |
| Globular Clusters                  |            | Harris, W.E., AJ, <b>112</b> , 1487, 1996.  |
| ICRF Sources                       | IAU/IERS   | Ma, C., and Feissel, M., eds, <i>IERS Tech Note 23</i> , 1997.  |
| Radio Flux Calibrators             |            | Baars, J.W.M., <i>et al.</i> , A&A, <b>61</b> , 99, 1977 plus updates.                                  |
| X-Ray Sources                      | Variety    | 4 <sup>th</sup> Uhuru Catalogue and source from Paradijs.   |
| Quasars                            |            | Véron-Cetty, M.-P., & Véron, P., A&A, <b>455</b> , 773, 2006.   |
| Pulsars                            |            | Manchester, R.N., <i>et al.</i> , AJ, <b>129</b> , 1993, 2005.  |
| Gamma Ray Sources                  |            | Macomb & Gehrels, ApJ Supp, <b>120</b> , 335, 1999.   |
| Ephemerides: Satellites of Planets |            |   |
| Mars                               | 1989       | Sinclair, A.T., A&A, <b>220</b> , 321.  |
| Jupiter I-IV                       | 1977, 1982 | Lieske, J.H., A&A, <b>56</b> , 333, & Arlot, J.-E., A&A, <b>107</b> , 305, respectively                 |
| Jupiter V                          | 1969       | Sudbury, P.V., <i>Icarus</i> , <b>10</b> , 116.   |
| Saturn: Mimas, Enceladus,          | 1957, 1972 | Kozai, Y., <i>Annals Toyko Observatory Series 2</i> , <b>5</b> , 73, Garcia, H.A., AJ, <b>77</b> , 684, |
| Tethys & Dione                     |            | respectively, where Garcia is used for some of the mean elements.                                       |
| Rhea & Titan                       | 1977       | Sinclair, A.T., MNRAS, <b>180</b> , 447.  |
| Hyperion                           | 1984       | Taylor, D.B., A&A, <b>141</b> , 151.  |
| Iapetus                            | 1974, 1988 | Sinclair, MNRAS, <b>169</b> , 591, Harper, D., A&A, <b>191</b> , 38, respectively.                      |
| Phoebe                             | 1954       | Zadunaisky, P.E., AJ, <b>59</b> , 1.  |
| Mean elements of 8 satellites      | 1988       | Taylor, D.B., and Shen, K.X., A&A, <b>200</b> , 269.  |
| Saturnian rings                    | 1984       | Esposito, L.W., <i>et al.</i> , <i>Saturn</i> , eds. Gehrels & Matthews, M.S., 468-478.                 |
| Uranus                             | 1987       | Laskar, J., & Jacobson, R.A., A&A, <b>188</b> , 212.  |
| Uranian rings                      | 1981       | Elliot, J.L., <i>et al.</i> , AJ, <b>86</b> , 444.  |
| Neptune: Triton & Nereid           | 1990       | Jacobson, R.A., A&A, <b>231</b> , 241.  |
| Pluto: Charon                      | 1985       | Tholen, D.J., AJ, <b>90</b> , 2353.   |
| Software                           |            | USNO/HMNAO, NOVAS v3, IAU-SOFA library.   |
| Vector/Matrix approach             | IAU 1976   |   |

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| A&A                  | <i>Astronomy and Astrophysics</i>                             |
| AJ                   | <i>Astronomical Journal</i>                                   |
| AAVSO                | American Association of Variable Stars Observers              |
| IAU                  | International Astronomical Union                              |
| IAU C4, C30          | IAU Commission 4, IAU Commission 30                           |
| IERS                 | International Earth Rotation and Reference Frame Service      |
| <i>Celest. Mech.</i> | <i>Celestial Mechanics</i>                                    |
| <i>J. Geod.</i>      | Journal of Geodesy  |
| JPL                  | Jet Propulsion Laboratory                                     |
| MNRAS                | <i>Monthly Notices of the Royal Astronomical Society</i>      |
| PASP                 | <i>Publication of the Astronomical Society of the Pacific</i> |
| SOFA                 | Standards for Fundamental Astronomy                           |
| <i>Trans. IAU</i>    | <i>Transaction of the International Astronomical Union</i>    |
| USNO                 | US Naval Observatory  |
| WDS                  | Washington Double Star Catalogue                              |

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