


EXTRACT FROM SECTION G

The following pages replace those in the printed almanac for 2008. This is necessary due to an unpredictable error in the transit times. Mostly the times are in error by 0<sup>m</sup>1 or 0<sup>m</sup>2; occasionally, the error reached 0<sup>m</sup>4. The astrometric right ascension, declination and magnitude are also tabulated but are unchanged.

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Notes .....	G1
Geocentric ephemeris, magnitude, time of ephemeris transit for:	
Pallas .....	G5
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Vesta .....	G7
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Psyche .....	G13
Europa .....	G14
Cybele .....	G15

 This symbol indicates that these data or auxiliary material may also be found on *The Astronomical Almanac Online* at <http://asa.usno.navy.mil> and <http://asa.hmnao.com>

**Note**

A daily geocentric astrometric ephemeris is tabulated for those of the 15 larger minor planets (Ceres, Pallas, Juno, Vesta, Hebe, Iris, Flora, Metis, Hygiea, Eunomia, Psyche, Europa, Cybele, Davida and Interamnia) that have an opposition date occurring between 2008 January 1 and January 31 of the following year. The daily ephemeris of each object is centred about the opposition date, which is repeated at the bottom of the first column and at the top of the second column. The highlighted dates indicate when the object is stationary in right ascension. It is very occasionally possible for a stationary date to be outside the period tabulated.

Linear interpolation is sufficient for the magnitude and ephemeris transit, but for the right ascension and declination second differences are significant. The tabulations are similar to those for Pluto, and the use of the data is similar to that for major planets.

PALLAS, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

G5

Date	Astrometric		Vis. Mag.	Ephem- eris Transit	Date	Astrometric		Vis. Mag.	Ephem- eris Transit
	R.A.	Dec.				R.A.	Dec.		
	h m s	° ' "				h m s	° ' "		
<b>2008 Oct. 6</b>	5 24 06.2	-17 33 21	8.6	4 23.8	<b>2008 Dec. 4</b>	5 14 28.9	-32 23 26	8.0	0 22.1
<b>7</b>	5 24 44.1	-17 51 35	8.6	4 20.5	<b>5</b>	5 13 37.1	-32 28 51	8.0	0 17.3
<b>8</b>	5 25 20.5	-18 09 54	8.5	4 17.2	<b>6</b>	5 12 44.8	-32 33 45	8.0	0 12.5
<b>9</b>	5 25 55.4	-18 28 16	8.5	4 13.8	<b>7</b>	5 11 52.0	-32 38 08	8.0	0 07.7
<b>10</b>	5 26 28.9	-18 46 41	8.5	4 10.4	<b>8</b>	5 10 59.0	-32 42 00	8.0	0 02.8
<b>11</b>	5 27 00.9	-19 05 10	8.5	4 07.0	<b>9</b>	5 10 05.7	-32 45 20	8.0	23 53.2
<b>12</b>	5 27 31.3	-19 23 41	8.5	4 03.6	<b>10</b>	5 09 12.3	-32 48 08	8.0	23 48.4
<b>13</b>	5 28 00.2	-19 42 14	8.5	4 00.1	<b>11</b>	5 08 18.8	-32 50 25	8.0	23 43.6
<b>14</b>	5 28 27.5	-20 00 49	8.5	3 56.6	<b>12</b>	5 07 25.3	-32 52 10	8.0	23 38.8
<b>15</b>	5 28 53.3	-20 19 25	8.4	3 53.1	<b>13</b>	5 06 31.9	-32 53 23	8.0	23 33.9
<b>16</b>	5 29 17.4	-20 38 01	8.4	3 49.6	<b>14</b>	5 05 38.6	-32 54 05	8.0	23 29.1
<b>17</b>	5 29 39.9	-20 56 38	8.4	3 46.0	<b>15</b>	5 04 45.5	-32 54 14	8.0	23 24.3
<b>18</b>	5 30 00.8	-21 15 15	8.4	3 42.4	<b>16</b>	5 03 52.8	-32 53 52	8.0	23 19.5
<b>19</b>	5 30 20.0	-21 33 51	8.4	3 38.8	<b>17</b>	5 03 00.4	-32 52 58	8.0	23 14.7
<b>20</b>	5 30 37.5	-21 52 25	8.4	3 35.2	<b>18</b>	5 02 08.6	-32 51 32	8.0	23 10.0
<b>21</b>	5 30 53.3	-22 10 58	8.4	3 31.5	<b>19</b>	5 01 17.2	-32 49 34	8.0	23 05.2
<b>22</b>	5 31 07.4	-22 29 28	8.4	3 27.8	<b>20</b>	5 00 26.5	-32 47 05	8.0	23 00.4
<b>23</b>	5 31 19.7	-22 47 56	8.3	3 24.1	<b>21</b>	4 59 36.4	-32 44 05	8.0	22 55.7
<b>24</b>	5 31 30.3	-23 06 19	8.3	3 20.3	<b>22</b>	4 58 47.2	-32 40 33	8.0	22 50.9
<b>25</b>	5 31 39.1	-23 24 38	8.3	3 16.5	<b>23</b>	4 57 58.8	-32 36 31	8.0	22 46.2
<b>26</b>	5 31 46.1	-23 42 52	8.3	3 12.7	<b>24</b>	4 57 11.3	-32 31 58	8.0	22 41.5
<b>27</b>	5 31 51.3	-24 01 00	8.3	3 08.8	<b>25</b>	4 56 24.8	-32 26 54	8.0	22 36.8
<b>28</b>	5 31 54.7	-24 19 02	8.3	3 05.0	<b>26</b>	4 55 39.4	-32 21 21	8.0	22 32.2
<b>Oct. 29</b>	5 31 56.3	-24 36 57	8.3	3 01.0	<b>27</b>	4 54 55.2	-32 15 17	8.0	22 27.5
<b>30</b>	5 31 56.1	-24 54 44	8.2	2 57.1	<b>28</b>	4 54 12.1	-32 08 45	8.0	22 22.9
<b>31</b>	5 31 54.1	-25 12 22	8.2	2 53.1	<b>29</b>	4 53 30.3	-32 01 44	8.0	22 18.3
<b>Nov. 1</b>	5 31 50.2	-25 29 51	8.2	2 49.1	<b>30</b>	4 52 49.8	-31 54 15	8.0	22 13.7
<b>2</b>	5 31 44.6	-25 47 10	8.2	2 45.1	<b>31</b>	4 52 10.7	-31 46 17	8.0	22 09.2
<b>3</b>	5 31 37.1	-26 04 19	8.2	2 41.0	<b>2009 Jan. 1</b>	4 51 33.1	-31 37 53	8.0	22 04.6
<b>4</b>	5 31 27.8	-26 21 16	8.2	2 37.0	<b>2</b>	4 50 56.9	-31 29 01	8.0	22 00.1
<b>5</b>	5 31 16.7	-26 38 01	8.2	2 32.8	<b>3</b>	4 50 22.3	-31 19 43	8.0	21 55.6
<b>6</b>	5 31 03.8	-26 54 33	8.2	2 28.7	<b>4</b>	4 49 49.3	-31 10 00	8.0	21 51.2
<b>7</b>	5 30 49.1	-27 10 51	8.2	2 24.5	<b>5</b>	4 49 17.9	-30 59 51	8.0	21 46.8
<b>8</b>	5 30 32.6	-27 26 55	8.1	2 20.3	<b>6</b>	4 48 48.2	-30 49 18	8.0	21 42.4
<b>9</b>	5 30 14.4	-27 42 45	8.1	2 16.1	<b>7</b>	4 48 20.1	-30 38 21	8.0	21 38.0
<b>10</b>	5 29 54.5	-27 58 18	8.1	2 11.8	<b>8</b>	4 47 53.8	-30 27 01	8.0	21 33.7
<b>11</b>	5 29 32.8	-28 13 35	8.1	2 07.5	<b>9</b>	4 47 29.3	-30 15 18	8.1	21 29.3
<b>12</b>	5 29 09.4	-28 28 35	8.1	2 03.2	<b>10</b>	4 47 06.5	-30 03 13	8.1	21 25.1
<b>13</b>	5 28 44.3	-28 43 17	8.1	1 58.8	<b>11</b>	4 46 45.6	-29 50 47	8.1	21 20.8
<b>14</b>	5 28 17.5	-28 57 41	8.1	1 54.4	<b>12</b>	4 46 26.4	-29 37 59	8.1	21 16.6
<b>15</b>	5 27 49.1	-29 11 46	8.1	1 50.0	<b>13</b>	4 46 09.1	-29 24 51	8.1	21 12.4
<b>16</b>	5 27 19.1	-29 25 31	8.1	1 45.6	<b>14</b>	4 45 53.7	-29 11 24	8.1	21 08.2
<b>17</b>	5 26 47.5	-29 38 55	8.1	1 41.2	<b>15</b>	4 45 40.1	-28 57 37	8.1	21 04.1
<b>18</b>	5 26 14.3	-29 51 58	8.1	1 36.7	<b>16</b>	4 45 28.4	-28 43 31	8.1	21 00.0
<b>19</b>	5 25 39.6	-30 04 39	8.0	1 32.2	<b>17</b>	4 45 18.6	-28 29 07	8.1	20 55.9
<b>20</b>	5 25 03.4	-30 16 57	8.0	1 27.6	<b>18</b>	4 45 10.7	-28 14 26	8.1	20 51.9
<b>21</b>	5 24 25.7	-30 28 51	8.0	1 23.1	<b>19</b>	4 45 04.8	-27 59 28	8.1	20 47.9
<b>22</b>	5 23 46.6	-30 40 22	8.0	1 18.5	<b>20</b>	4 45 00.7	-27 44 13	8.1	20 43.9
<b>23</b>	5 23 06.2	-30 51 28	8.0	1 13.9	<b>Jan. 21</b>	4 44 58.7	-27 28 43	8.1	20 40.0
<b>24</b>	5 22 24.5	-31 02 08	8.0	1 09.3	<b>22</b>	4 44 58.5	-27 12 58	8.1	20 36.1
<b>25</b>	5 21 41.5	-31 12 22	8.0	1 04.6	<b>23</b>	4 45 00.3	-26 56 58	8.1	20 32.2
<b>26</b>	5 20 57.3	-31 22 09	8.0	0 59.9	<b>24</b>	4 45 04.1	-26 40 44	8.2	20 28.4
<b>27</b>	5 20 12.0	-31 31 30	8.0	0 55.3	<b>25</b>	4 45 09.8	-26 24 16	8.2	20 24.6
<b>28</b>	5 19 25.7	-31 40 22	8.0	0 50.6	<b>26</b>	4 45 17.4	-26 07 36	8.2	20 20.8
<b>29</b>	5 18 38.3	-31 48 46	8.0	0 45.8	<b>27</b>	4 45 27.0	-25 50 44	8.2	20 17.1
<b>30</b>	5 17 50.0	-31 56 41	8.0	0 41.1	<b>28</b>	4 45 38.5	-25 33 40	8.2	20 13.3
<b>Dec. 1</b>	5 17 00.8	-32 04 07	8.0	0 36.4	<b>29</b>	4 45 52.0	-25 16 25	8.2	20 09.7
<b>2</b>	5 16 10.9	-32 11 03	8.0	0 31.6	<b>30</b>	4 46 07.4	-24 59 00	8.2	20 06.0
<b>3</b>	5 15 20.2	-32 17 30	8.0	0 26.8	<b>31</b>	4 46 24.6	-24 41 25	8.2	20 02.4
<b>Dec. 4</b>	5 14 28.9	-32 23 26	8.0	0 22.1	<b>Feb. 1</b>	4 46 43.8	-24 23 41	8.2	19 58.8

Second transit for Pallas 2008 December 8<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>0

JUNO, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric				Vis. Mag.	Ephem- eris Transit	Date	Astrometric				Vis. Mag.	Ephem- eris Transit
	R.A.			Dec.				R.A.			Dec.		
	h	m	s	° / ′ ″				h	m	s	° / ′ ″		
<b>2008 Apr. 14</b>	17 58	01.0	-	8 01 54	10.8	4 27.6	<b>2008 June 12</b>	17 29	57.5	-	4 33 02	10.1	0 07.6
<b>15</b>	17 58	06.1	-	7 57 12	10.8	4 23.8	<b>13</b>	17 29	05.7	-	4 32 10	10.0	0 02.9
<b>16</b>	17 58	09.9	-	7 52 30	10.8	4 19.9	<b>14</b>	17 28	13.8	-	4 31 26	10.0	23 53.3
<b>17</b>	17 58	12.5	-	7 47 48	10.8	4 16.0	<b>15</b>	17 27	21.8	-	4 30 49	10.0	23 48.5
<b>Apr. 18</b>	17 58	13.9	-	7 43 06	10.8	4 12.1	<b>16</b>	17 26	29.9	-	4 30 20	10.0	23 43.7
<b>19</b>	17 58	14.0	-	7 38 24	10.8	4 08.2	<b>17</b>	17 25	38.1	-	4 29 59	10.1	23 38.9
<b>20</b>	17 58	12.8	-	7 33 42	10.8	4 04.2	<b>18</b>	17 24	46.3	-	4 29 46	10.1	23 34.1
<b>21</b>	17 58	10.3	-	7 29 00	10.7	4 00.2	<b>19</b>	17 23	54.8	-	4 29 40	10.1	23 29.3
<b>22</b>	17 58	06.6	-	7 24 18	10.7	3 56.2	<b>20</b>	17 23	03.4	-	4 29 43	10.1	23 24.6
<b>23</b>	17 58	01.6	-	7 19 37	10.7	3 52.2	<b>21</b>	17 22	12.3	-	4 29 53	10.1	23 19.8
<b>24</b>	17 57	55.3	-	7 14 57	10.7	3 48.2	<b>22</b>	17 21	21.5	-	4 30 12	10.1	23 15.0
<b>25</b>	17 57	47.7	-	7 10 17	10.7	3 44.1	<b>23</b>	17 20	31.0	-	4 30 38	10.1	23 10.2
<b>26</b>	17 57	38.9	-	7 05 39	10.7	3 40.0	<b>24</b>	17 19	40.9	-	4 31 12	10.1	23 05.5
<b>27</b>	17 57	28.7	-	7 01 01	10.7	3 35.9	<b>25</b>	17 18	51.2	-	4 31 54	10.1	23 00.7
<b>28</b>	17 57	17.3	-	6 56 25	10.6	3 31.8	<b>26</b>	17 18	02.0	-	4 32 44	10.1	22 56.0
<b>29</b>	17 57	04.6	-	6 51 50	10.6	3 27.7	<b>27</b>	17 17	13.2	-	4 33 42	10.1	22 51.3
<b>30</b>	17 56	50.5	-	6 47 16	10.6	3 23.5	<b>28</b>	17 16	25.0	-	4 34 47	10.1	22 46.6
<b>May 1</b>	17 56	35.2	-	6 42 44	10.6	3 19.3	<b>29</b>	17 15	37.4	-	4 36 01	10.1	22 41.8
<b>2</b>	17 56	18.6	-	6 38 14	10.6	3 15.1	<b>30</b>	17 14	50.5	-	4 37 21	10.1	22 37.1
<b>3</b>	17 56	00.8	-	6 33 46	10.6	3 10.9	<b>July 1</b>	17 14	04.2	-	4 38 50	10.2	22 32.5
<b>4</b>	17 55	41.6	-	6 29 20	10.5	3 06.6	<b>2</b>	17 13	18.6	-	4 40 26	10.2	22 27.8
<b>5</b>	17 55	21.2	-	6 24 56	10.5	3 02.3	<b>3</b>	17 12	33.7	-	4 42 10	10.2	22 23.1
<b>6</b>	17 54	59.5	-	6 20 35	10.5	2 58.0	<b>4</b>	17 11	49.6	-	4 44 01	10.2	22 18.5
<b>7</b>	17 54	36.6	-	6 16 17	10.5	2 53.7	<b>5</b>	17 11	06.4	-	4 45 59	10.2	22 13.8
<b>8</b>	17 54	12.4	-	6 12 01	10.5	2 49.4	<b>6</b>	17 10	24.0	-	4 48 05	10.2	22 09.2
<b>9</b>	17 53	47.0	-	6 07 49	10.5	2 45.0	<b>7</b>	17 09	42.5	-	4 50 17	10.2	22 04.6
<b>10</b>	17 53	20.4	-	6 03 39	10.5	2 40.7	<b>8</b>	17 09	01.9	-	4 52 37	10.2	22 00.0
<b>11</b>	17 52	52.7	-	5 59 33	10.4	2 36.3	<b>9</b>	17 08	22.3	-	4 55 04	10.2	21 55.4
<b>12</b>	17 52	23.7	-	5 55 30	10.4	2 31.9	<b>10</b>	17 07	43.6	-	4 57 37	10.3	21 50.9
<b>13</b>	17 51	53.6	-	5 51 32	10.4	2 27.4	<b>11</b>	17 07	06.0	-	5 00 17	10.3	21 46.3
<b>14</b>	17 51	22.3	-	5 47 36	10.4	2 23.0	<b>12</b>	17 06	29.4	-	5 03 03	10.3	21 41.8
<b>15</b>	17 50	50.0	-	5 43 45	10.4	2 18.5	<b>13</b>	17 05	53.8	-	5 05 56	10.3	21 37.3
<b>16</b>	17 50	16.5	-	5 39 58	10.4	2 14.0	<b>14</b>	17 05	19.3	-	5 08 55	10.3	21 32.8
<b>17</b>	17 49	41.9	-	5 36 15	10.3	2 09.5	<b>15</b>	17 04	45.9	-	5 12 00	10.3	21 28.4
<b>18</b>	17 49	06.3	-	5 32 37	10.3	2 05.0	<b>16</b>	17 04	13.6	-	5 15 11	10.3	21 23.9
<b>19</b>	17 48	29.7	-	5 29 03	10.3	2 00.4	<b>17</b>	17 03	42.5	-	5 18 28	10.3	21 19.5
<b>20</b>	17 47	52.0	-	5 25 34	10.3	1 55.9	<b>18</b>	17 03	12.5	-	5 21 50	10.4	21 15.1
<b>21</b>	17 47	13.4	-	5 22 10	10.3	1 51.3	<b>19</b>	17 02	43.7	-	5 25 18	10.4	21 10.7
<b>22</b>	17 46	33.8	-	5 18 51	10.3	1 46.7	<b>20</b>	17 02	16.0	-	5 28 51	10.4	21 06.3
<b>23</b>	17 45	53.2	-	5 15 37	10.3	1 42.1	<b>21</b>	17 01	49.6	-	5 32 30	10.4	21 02.0
<b>24</b>	17 45	11.7	-	5 12 28	10.2	1 37.5	<b>22</b>	17 01	24.3	-	5 36 14	10.4	20 57.6
<b>25</b>	17 44	29.4	-	5 09 25	10.2	1 32.9	<b>23</b>	17 01	00.3	-	5 40 03	10.4	20 53.3
<b>26</b>	17 43	46.2	-	5 06 28	10.2	1 28.2	<b>24</b>	17 00	37.5	-	5 43 57	10.4	20 49.0
<b>27</b>	17 43	02.2	-	5 03 36	10.2	1 23.6	<b>25</b>	17 00	16.0	-	5 47 55	10.4	20 44.7
<b>28</b>	17 42	17.4	-	5 00 51	10.2	1 18.9	<b>26</b>	16 59	55.7	-	5 51 58	10.5	20 40.5
<b>29</b>	17 41	31.9	-	4 58 12	10.2	1 14.2	<b>27</b>	16 59	36.7	-	5 56 06	10.5	20 36.3
<b>30</b>	17 40	45.6	-	4 55 39	10.2	1 09.5	<b>28</b>	16 59	18.9	-	6 00 18	10.5	20 32.1
<b>31</b>	17 39	58.6	-	4 53 12	10.1	1 04.8	<b>29</b>	16 59	02.4	-	6 04 34	10.5	20 27.9
<b>June 1</b>	17 39	11.1	-	4 50 52	10.1	1 00.1	<b>30</b>	16 58	47.3	-	6 08 55	10.5	20 23.7
<b>2</b>	17 38	22.9	-	4 48 39	10.1	0 55.3	<b>31</b>	16 58	33.4	-	6 13 19	10.5	20 19.6
<b>3</b>	17 37	34.1	-	4 46 33	10.1	0 50.6	<b>Aug. 1</b>	16 58	20.8	-	6 17 47	10.5	20 15.4
<b>4</b>	17 36	44.8	-	4 44 33	10.1	0 45.8	<b>2</b>	16 58	09.6	-	6 22 18	10.5	20 11.3
<b>5</b>	17 35	55.1	-	4 42 41	10.1	0 41.1	<b>3</b>	16 57	59.6	-	6 26 53	10.6	20 07.3
<b>6</b>	17 35	04.9	-	4 40 56	10.1	0 36.3	<b>4</b>	16 57	51.0	-	6 31 32	10.6	20 03.2
<b>7</b>	17 34	14.4	-	4 39 18	10.1	0 31.6	<b>5</b>	16 57	43.7	-	6 36 13	10.6	19 59.2
<b>8</b>	17 33	23.5	-	4 37 48	10.1	0 26.8	<b>6</b>	16 57	37.7	-	6 40 58	10.6	19 55.2
<b>9</b>	17 32	32.3	-	4 36 25	10.1	0 22.0	<b>7</b>	16 57	33.0	-	6 45 45	10.6	19 51.2
<b>10</b>	17 31	40.9	-	4 35 10	10.1	0 17.2	<b>8</b>	16 57	29.6	-	6 50 35	10.6	19 47.2
<b>11</b>	17 30	49.3	-	4 34 02	10.1	0 12.4	<b>9</b>	16 57	27.6	-	6 55 28	10.6	19 43.3
<b>June 12</b>	17 29	57.5	-	4 33 02	10.1	0 07.6	<b>Aug. 10</b>	16 57	26.8	-	7 00 23	10.6	19 39.3

Second transit for Juno 2008 June 13<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>1

VESTA, 2008

G7

GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric					Vis. Mag.	Ephem- eris Transit	Date	Astrometric					Vis. Mag.	Ephem- eris Transit
	R.A.			Dec.					R.A.			Dec.			
	h	m	s	°	'				"	h	m	s	°		
<b>2008 Sept. 1</b>	2 59	05.5	+	7 19	08	7.4	4 16.8	<b>2008 Oct. 30</b>	2 32	20.5	+	3 34	51	6.4	23 53.2
<b>2</b>	2 59	24.3	+	7 17	27	7.4	4 13.2	<b>31</b>	2 31	20.2	+	3 31	15	6.4	23 48.2
<b>3</b>	2 59	41.5	+	7 15	38	7.4	4 09.5	<b>Nov. 1</b>	2 30	19.9	+	3 27	47	6.5	23 43.3
<b>4</b>	2 59	57.1	+	7 13	42	7.4	4 05.9	<b>2</b>	2 29	19.7	+	3 24	26	6.5	23 38.4
<b>5</b>	3 00	11.1	+	7 11	40	7.3	4 02.2	<b>3</b>	2 28	19.7	+	3 21	12	6.5	23 33.5
<b>6</b>	3 00	23.5	+	7 09	31	7.3	3 58.4	<b>4</b>	2 27	19.9	+	3 18	07	6.5	23 28.6
<b>7</b>	3 00	34.2	+	7 07	15	7.3	3 54.7	<b>5</b>	2 26	20.3	+	3 15	09	6.5	23 23.6
<b>8</b>	3 00	43.3	+	7 04	53	7.3	3 50.9	<b>6</b>	2 25	21.2	+	3 12	21	6.5	23 18.7
<b>9</b>	3 00	50.8	+	7 02	24	7.3	3 47.1	<b>7</b>	2 24	22.5	+	3 09	41	6.5	23 13.8
<b>10</b>	3 00	56.5	+	6 59	48	7.3	3 43.2	<b>8</b>	2 23	24.2	+	3 07	10	6.5	23 09.0
<b>11</b>	3 01	00.6	+	6 57	06	7.2	3 39.4	<b>9</b>	2 22	26.6	+	3 04	48	6.6	23 04.1
<b>Sept. 12</b>	3 01	03.0	+	6 54	18	7.2	3 35.5	<b>10</b>	2 21	29.6	+	3 02	35	6.6	22 59.2
<b>13</b>	3 01	03.7	+	6 51	24	7.2	3 31.5	<b>11</b>	2 20	33.3	+	3 00	33	6.6	22 54.4
<b>14</b>	3 01	02.7	+	6 48	23	7.2	3 27.6	<b>12</b>	2 19	37.8	+	2 58	39	6.6	22 49.5
<b>15</b>	3 00	59.9	+	6 45	16	7.2	3 23.6	<b>13</b>	2 18	43.1	+	2 56	56	6.6	22 44.7
<b>16</b>	3 00	55.5	+	6 42	04	7.2	3 19.6	<b>14</b>	2 17	49.3	+	2 55	23	6.7	22 39.9
<b>17</b>	3 00	49.2	+	6 38	46	7.1	3 15.6	<b>15</b>	2 16	56.4	+	2 54	00	6.7	22 35.1
<b>18</b>	3 00	41.3	+	6 35	21	7.1	3 11.5	<b>16</b>	2 16	04.5	+	2 52	47	6.7	22 30.3
<b>19</b>	3 00	31.6	+	6 31	52	7.1	3 07.4	<b>17</b>	2 15	13.6	+	2 51	45	6.7	22 25.6
<b>20</b>	3 00	20.1	+	6 28	16	7.1	3 03.3	<b>18</b>	2 14	23.9	+	2 50	53	6.7	22 20.8
<b>21</b>	3 00	06.9	+	6 24	36	7.1	2 59.1	<b>19</b>	2 13	35.2	+	2 50	11	6.8	22 16.1
<b>22</b>	2 59	51.9	+	6 20	50	7.0	2 54.9	<b>20</b>	2 12	47.8	+	2 49	40	6.8	22 11.4
<b>23</b>	2 59	35.2	+	6 16	59	7.0	2 50.7	<b>21</b>	2 12	01.5	+	2 49	20	6.8	22 06.7
<b>24</b>	2 59	16.6	+	6 13	03	7.0	2 46.5	<b>22</b>	2 11	16.6	+	2 49	11	6.8	22 02.1
<b>25</b>	2 58	56.4	+	6 09	03	7.0	2 42.2	<b>23</b>	2 10	33.0	+	2 49	13	6.9	21 57.4
<b>26</b>	2 58	34.4	+	6 04	58	7.0	2 37.9	<b>24</b>	2 09	50.7	+	2 49	25	6.9	21 52.8
<b>27</b>	2 58	10.6	+	6 00	48	7.0	2 33.6	<b>25</b>	2 09	09.9	+	2 49	48	6.9	21 48.2
<b>28</b>	2 57	45.2	+	5 56	35	6.9	2 29.2	<b>26</b>	2 08	30.4	+	2 50	23	6.9	21 43.7
<b>29</b>	2 57	18.0	+	5 52	18	6.9	2 24.8	<b>27</b>	2 07	52.5	+	2 51	08	6.9	21 39.1
<b>30</b>	2 56	49.1	+	5 47	57	6.9	2 20.4	<b>28</b>	2 07	16.0	+	2 52	03	7.0	21 34.6
<b>Oct. 1</b>	2 56	18.6	+	5 43	33	6.9	2 16.0	<b>29</b>	2 06	41.1	+	2 53	10	7.0	21 30.1
<b>2</b>	2 55	46.4	+	5 39	06	6.9	2 11.5	<b>30</b>	2 06	07.7	+	2 54	27	7.0	21 25.7
<b>3</b>	2 55	12.6	+	5 34	36	6.8	2 07.0	<b>Dec. 1</b>	2 05	35.9	+	2 55	56	7.0	21 21.2
<b>4</b>	2 54	37.2	+	5 30	04	6.8	2 02.5	<b>2</b>	2 05	05.7	+	2 57	34	7.0	21 16.8
<b>5</b>	2 54	00.2	+	5 25	29	6.8	1 58.0	<b>3</b>	2 04	37.1	+	2 59	23	7.1	21 12.4
<b>6</b>	2 53	21.7	+	5 20	53	6.8	1 53.4	<b>4</b>	2 04	10.1	+	3 01	23	7.1	21 08.1
<b>7</b>	2 52	41.8	+	5 16	15	6.8	1 48.8	<b>5</b>	2 03	44.8	+	3 03	33	7.1	21 03.8
<b>8</b>	2 52	00.4	+	5 11	36	6.8	1 44.2	<b>6</b>	2 03	21.1	+	3 05	53	7.1	20 59.5
<b>9</b>	2 51	17.5	+	5 06	55	6.7	1 39.5	<b>7</b>	2 02	59.1	+	3 08	23	7.1	20 55.2
<b>10</b>	2 50	33.3	+	5 02	14	6.7	1 34.9	<b>8</b>	2 02	38.7	+	3 11	03	7.2	20 50.9
<b>11</b>	2 49	47.8	+	4 57	33	6.7	1 30.2	<b>9</b>	2 02	20.0	+	3 13	53	7.2	20 46.7
<b>12</b>	2 49	01.0	+	4 52	52	6.7	1 25.5	<b>10</b>	2 02	03.0	+	3 16	52	7.2	20 42.5
<b>13</b>	2 48	12.9	+	4 48	11	6.7	1 20.7	<b>11</b>	2 01	47.7	+	3 20	01	7.2	20 38.4
<b>14</b>	2 47	23.6	+	4 43	30	6.6	1 16.0	<b>12</b>	2 01	34.0	+	3 23	19	7.3	20 34.2
<b>15</b>	2 46	33.3	+	4 38	51	6.6	1 11.2	<b>13</b>	2 01	22.0	+	3 26	47	7.3	20 30.1
<b>16</b>	2 45	41.8	+	4 34	12	6.6	1 06.4	<b>14</b>	2 01	11.6	+	3 30	23	7.3	20 26.1
<b>17</b>	2 44	49.3	+	4 29	36	6.6	1 01.6	<b>15</b>	2 01	02.9	+	3 34	08	7.3	20 22.0
<b>18</b>	2 43	55.8	+	4 25	01	6.6	0 56.8	<b>16</b>	2 00	55.8	+	3 38	02	7.3	20 18.0
<b>19</b>	2 43	01.4	+	4 20	29	6.6	0 52.0	<b>17</b>	2 00	50.4	+	3 42	04	7.4	20 14.0
<b>20</b>	2 42	06.1	+	4 15	59	6.5	0 47.1	<b>18</b>	2 00	46.7	+	3 46	15	7.4	20 10.0
<b>21</b>	2 41	10.0	+	4 11	32	6.5	0 42.3	<b>Dec. 19</b>	2 00	44.5	+	3 50	34	7.4	20 06.1
<b>22</b>	2 40	13.2	+	4 07	09	6.5	0 37.4	<b>20</b>	2 00	44.0	+	3 55	01	7.4	20 02.1
<b>23</b>	2 39	15.7	+	4 02	49	6.5	0 32.5	<b>21</b>	2 00	45.1	+	3 59	37	7.4	19 58.2
<b>24</b>	2 38	17.6	+	3 58	34	6.5	0 27.6	<b>22</b>	2 00	47.8	+	4 04	20	7.4	19 54.4
<b>25</b>	2 37	19.0	+	3 54	23	6.5	0 22.7	<b>23</b>	2 00	52.1	+	4 09	11	7.5	19 50.5
<b>26</b>	2 36	19.9	+	3 50	18	6.5	0 17.8	<b>24</b>	2 00	58.0	+	4 14	09	7.5	19 46.7
<b>27</b>	2 35	20.4	+	3 46	17	6.5	0 12.9	<b>25</b>	2 01	05.5	+	4 19	15	7.5	19 42.9
<b>28</b>	2 34	20.7	+	3 42	22	6.5	0 08.0	<b>26</b>	2 01	14.5	+	4 24	28	7.5	19 39.2
<b>29</b>	2 33	20.6	+	3 38	33	6.4	0 03.0	<b>27</b>	2 01	25.1	+	4 29	48	7.5	19 35.4
<b>Oct. 30</b>	2 32	20.5	+	3 34	51	6.4	23 53.2	<b>Dec. 28</b>	2 01	37.3	+	4 35	14	7.6	19 31.7

Second transit for Vesta 2008 October 29<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>1

HEBE, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric					Vis. Mag.	Ephem- eris Transit	Date	Astrometric					Vis. Mag.	Ephem- eris Transit
	R.A.		Dec.						R.A.		Dec.				
	h	m	s	°	'				"	h	m	s	°		
<b>2007 Dec.</b> 10	9 45	43.5	+	8 14	51	10.0	4 32.1	<b>2008 Feb.</b> 7	9 18	55.0	+	15 05	04	8.8	0 13.3
11	9 46	01.5	+	8 16	20	10.0	4 28.5	8	9 17	57.3	+	15 15	22	8.9	0 08.5
12	9 46	17.8	+	8 18	01	10.0	4 24.8	9	9 16	59.6	+	15 25	37	8.9	0 03.6
13	9 46	32.5	+	8 19	53	10.0	4 21.1	10	9 16	02.2	+	15 35	49	9.0	23 53.8
14	9 46	45.6	+	8 21	58	10.0	4 17.4	11	9 15	05.1	+	15 45	58	9.0	23 48.9
15	9 46	57.0	+	8 24	14	9.9	4 13.6	12	9 14	08.3	+	15 56	02	9.0	23 44.1
16	9 47	06.8	+	8 26	42	9.9	4 09.9	13	9 13	11.9	+	16 06	02	9.1	23 39.2
17	9 47	14.9	+	8 29	22	9.9	4 06.1	14	9 12	16.0	+	16 15	57	9.1	23 34.4
18	9 47	21.3	+	8 32	15	9.9	4 02.2	15	9 11	20.7	+	16 25	46	9.1	23 29.5
19	9 47	26.1	+	8 35	20	9.9	3 58.4	16	9 10	26.1	+	16 35	29	9.2	23 24.7
20	9 47	29.1	+	8 38	37	9.9	3 54.5	17	9 09	32.1	+	16 45	05	9.2	23 19.9
<b>Dec.</b> 21	9 47	30.5	+	8 42	07	9.8	3 50.6	18	9 08	38.9	+	16 54	35	9.2	23 15.1
22	9 47	30.1	+	8 45	50	9.8	3 46.6	19	9 07	46.5	+	17 03	57	9.3	23 10.3
23	9 47	28.1	+	8 49	45	9.8	3 42.7	20	9 06	55.0	+	17 13	12	9.3	23 05.5
24	9 47	24.3	+	8 53	53	9.8	3 38.7	21	9 06	04.5	+	17 22	19	9.3	23 00.8
25	9 47	18.8	+	8 58	14	9.8	3 34.6	22	9 05	14.9	+	17 31	17	9.4	22 56.1
26	9 47	11.6	+	9 02	47	9.8	3 30.6	23	9 04	26.4	+	17 40	08	9.4	22 51.3
27	9 47	02.6	+	9 07	33	9.7	3 26.5	24	9 03	39.0	+	17 48	49	9.4	22 46.6
28	9 46	52.0	+	9 12	33	9.7	3 22.4	25	9 02	52.7	+	17 57	21	9.4	22 42.0
29	9 46	39.5	+	9 17	45	9.7	3 18.2	26	9 02	07.7	+	18 05	44	9.5	22 37.3
30	9 46	25.4	+	9 23	10	9.7	3 14.1	27	9 01	23.9	+	18 13	58	9.5	22 32.7
31	9 46	09.5	+	9 28	48	9.7	3 09.9	28	9 00	41.3	+	18 22	02	9.5	22 28.1
<b>2008 Jan.</b> 1	9 45	51.8	+	9 34	39	9.7	3 05.6	29	9 00	00.1	+	18 29	56	9.5	22 23.5
2	9 45	32.5	+	9 40	43	9.6	3 01.4	<b>Mar.</b> 1	8 59	20.3	+	18 37	39	9.6	22 18.9
3	9 45	11.4	+	9 47	00	9.6	2 57.1	2	8 58	41.8	+	18 45	13	9.6	22 14.3
4	9 44	48.7	+	9 53	29	9.6	2 52.8	3	8 58	04.9	+	18 52	36	9.6	22 09.8
5	9 44	24.2	+	10 00	11	9.6	2 48.5	4	8 57	29.4	+	18 59	49	9.6	22 05.3
6	9 43	58.1	+	10 07	05	9.6	2 44.1	5	8 56	55.4	+	19 06	51	9.7	22 00.9
7	9 43	30.3	+	10 14	11	9.5	2 39.7	6	8 56	22.9	+	19 13	42	9.7	21 56.4
8	9 43	00.8	+	10 21	30	9.5	2 35.3	7	8 55	52.0	+	19 20	23	9.7	21 52.0
9	9 42	29.8	+	10 29	00	9.5	2 30.8	8	8 55	22.7	+	19 26	52	9.7	21 47.6
10	9 41	57.1	+	10 36	42	9.5	2 26.3	9	8 54	55.0	+	19 33	11	9.8	21 43.2
11	9 41	23.0	+	10 44	36	9.5	2 21.8	10	8 54	29.0	+	19 39	19	9.8	21 38.9
12	9 40	47.2	+	10 52	40	9.5	2 17.3	11	8 54	04.6	+	19 45	16	9.8	21 34.6
13	9 40	10.0	+	11 00	55	9.4	2 12.8	12	8 53	41.9	+	19 51	01	9.8	21 30.3
14	9 39	31.4	+	11 09	21	9.4	2 08.2	13	8 53	20.8	+	19 56	36	9.9	21 26.0
15	9 38	51.3	+	11 17	57	9.4	2 03.6	14	8 53	01.5	+	20 02	00	9.9	21 21.8
16	9 38	09.8	+	11 26	42	9.4	1 59.0	15	8 52	43.8	+	20 07	13	9.9	21 17.6
17	9 37	27.0	+	11 35	37	9.4	1 54.3	16	8 52	27.8	+	20 12	15	9.9	21 13.4
18	9 36	43.0	+	11 44	40	9.3	1 49.7	17	8 52	13.5	+	20 17	06	10.0	21 09.3
19	9 35	57.7	+	11 53	52	9.3	1 45.0	18	8 52	00.9	+	20 21	47	10.0	21 05.2
20	9 35	11.2	+	12 03	13	9.3	1 40.3	19	8 51	50.0	+	20 26	16	10.0	21 01.1
21	9 34	23.5	+	12 12	41	9.3	1 35.6	20	8 51	40.8	+	20 30	36	10.0	20 57.0
22	9 33	34.8	+	12 22	16	9.3	1 30.8	21	8 51	33.2	+	20 34	45	10.1	20 53.0
23	9 32	45.0	+	12 31	57	9.2	1 26.1	22	8 51	27.3	+	20 38	43	10.1	20 49.0
24	9 31	54.3	+	12 41	46	9.2	1 21.3	23	8 51	23.1	+	20 42	31	10.1	20 45.0
25	9 31	02.6	+	12 51	39	9.2	1 16.5	24	8 51	20.5	+	20 46	09	10.1	20 41.1
26	9 30	10.0	+	13 01	39	9.2	1 11.7	<b>Mar.</b> 25	8 51	19.6	+	20 49	37	10.1	20 37.1
27	9 29	16.6	+	13 11	42	9.2	1 06.9	26	8 51	20.3	+	20 52	55	10.2	20 33.2
28	9 28	22.5	+	13 21	51	9.1	1 02.1	27	8 51	22.6	+	20 56	03	10.2	20 29.4
29	9 27	27.7	+	13 32	03	9.1	0 57.2	28	8 51	26.6	+	20 59	02	10.2	20 25.5
30	9 26	32.2	+	13 42	18	9.1	0 52.4	29	8 51	32.2	+	21 01	50	10.2	20 21.7
31	9 25	36.3	+	13 52	35	9.1	0 47.5	30	8 51	39.3	+	21 04	29	10.2	20 17.9
<b>Feb.</b> 1	9 24	39.8	+	14 02	55	9.0	0 42.6	31	8 51	48.0	+	21 06	58	10.3	20 14.2
2	9 23	42.9	+	14 13	16	9.0	0 37.8	<b>Apr.</b> 1	8 51	58.3	+	21 09	18	10.3	20 10.4
3	9 22	45.7	+	14 23	38	9.0	0 32.9	2	8 52	10.1	+	21 11	29	10.3	20 06.7
4	9 21	48.2	+	14 34	01	8.9	0 28.0	3	8 52	23.5	+	21 13	30	10.3	20 03.0
5	9 20	50.6	+	14 44	23	8.9	0 23.1	4	8 52	38.4	+	21 15	23	10.4	19 59.4
6	9 19	52.8	+	14 54	44	8.9	0 18.2	5	8 52	54.8	+	21 17	06	10.4	19 55.7
<b>Feb.</b> 7	9 18	55.0	+	15 05	04	8.8	0 13.3	<b>Apr.</b> 6	8 53	12.7	+	21 18	40	10.4	19 52.1

Second transit for Hebe 2008 February 9<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>7

IRIS, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

G9

Date	Astrometric		Vis. Mag.	Ephem-eris Transit	Date	Astrometric		Vis. Mag.	Ephem-eris Transit
	R.A.	Dec.				R.A.	Dec.		
	h m s ° ' "	° ' "				h m s ° ' "	° ' "		
<b>2008 Feb.</b> 10	13 34 01.2	-16 45 53	10.5	4 16.0	<b>2008 Apr.</b> 9	13 01 54.5	-14 35 11	9.4	23 47.1
11	13 34 08.0	-16 48 26	10.4	4 12.1	10	13 00 58.6	-14 28 35	9.4	23 42.2
12	13 34 13.3	-16 50 50	10.4	4 08.3	11	13 00 02.8	-14 21 56	9.4	23 37.4
13	13 34 17.1	-16 53 06	10.4	4 04.4	12	12 59 07.4	-14 15 12	9.4	23 32.6
14	13 34 19.4	-16 55 13	10.4	4 00.5	13	12 58 12.4	-14 08 26	9.4	23 27.7
<b>Feb.</b> 15	13 34 20.2	-16 57 11	10.4	3 56.6	14	12 57 17.8	-14 01 38	9.5	23 22.9
16	13 34 19.4	-16 59 00	10.4	3 52.7	15	12 56 23.7	-13 54 47	9.5	23 18.1
17	13 34 17.1	-17 00 40	10.3	3 48.7	16	12 55 30.2	-13 47 54	9.5	23 13.3
18	13 34 13.2	-17 02 10	10.3	3 44.7	17	12 54 37.3	-13 41 00	9.5	23 08.5
19	13 34 07.9	-17 03 31	10.3	3 40.7	18	12 53 45.0	-13 34 06	9.6	23 03.7
20	13 34 00.9	-17 04 43	10.3	3 36.6	19	12 52 53.4	-13 27 11	9.6	22 58.9
21	13 33 52.4	-17 05 45	10.3	3 32.5	20	12 52 02.5	-13 20 15	9.6	22 54.1
22	13 33 42.4	-17 06 37	10.3	3 28.4	21	12 51 12.4	-13 13 21	9.6	22 49.4
23	13 33 30.8	-17 07 20	10.2	3 24.3	22	12 50 23.2	-13 06 26	9.6	22 44.7
24	13 33 17.6	-17 07 52	10.2	3 20.1	23	12 49 34.9	-12 59 33	9.7	22 39.9
25	13 33 02.9	-17 08 15	10.2	3 16.0	24	12 48 47.4	-12 52 42	9.7	22 35.2
26	13 32 46.6	-17 08 27	10.2	3 11.8	25	12 48 01.0	-12 45 53	9.7	22 30.5
27	13 32 28.8	-17 08 29	10.2	3 07.5	26	12 47 15.5	-12 39 06	9.7	22 25.9
28	13 32 09.4	-17 08 20	10.2	3 03.3	27	12 46 31.1	-12 32 21	9.8	22 21.2
29	13 31 48.5	-17 08 01	10.1	2 59.0	28	12 45 47.7	-12 25 40	9.8	22 16.6
<b>Mar.</b> 1	13 31 26.0	-17 07 32	10.1	2 54.7	29	12 45 05.4	-12 19 02	9.8	22 12.0
2	13 31 02.0	-17 06 52	10.1	2 50.4	30	12 44 24.3	-12 12 28	9.8	22 07.4
3	13 30 36.5	-17 06 01	10.1	2 46.0	<b>May</b> 1	12 43 44.4	-12 05 58	9.9	22 02.8
4	13 30 09.5	-17 04 59	10.1	2 41.6	2	12 43 05.6	-11 59 33	9.9	21 58.2
5	13 29 41.0	-17 03 46	10.1	2 37.2	3	12 42 28.1	-11 53 13	9.9	21 53.7
6	13 29 11.0	-17 02 23	10.0	2 32.8	4	12 41 51.9	-11 46 58	9.9	21 49.2
7	13 28 39.6	-17 00 48	10.0	2 28.3	5	12 41 16.9	-11 40 48	9.9	21 44.7
8	13 28 06.8	-16 59 03	10.0	2 23.8	6	12 40 43.3	-11 34 44	10.0	21 40.2
9	13 27 32.5	-16 57 06	10.0	2 19.3	7	12 40 10.9	-11 28 46	10.0	21 35.8
10	13 26 56.9	-16 54 59	10.0	2 14.8	8	12 39 39.9	-11 22 55	10.0	21 31.4
11	13 26 19.9	-16 52 41	9.9	2 10.3	9	12 39 10.3	-11 17 11	10.0	21 27.0
12	13 25 41.7	-16 50 12	9.9	2 05.7	10	12 38 42.1	-11 11 33	10.1	21 22.6
13	13 25 02.1	-16 47 32	9.9	2 01.1	11	12 38 15.3	-11 06 03	10.1	21 18.2
14	13 24 21.3	-16 44 41	9.9	1 56.5	12	12 37 49.8	-11 00 39	10.1	21 13.9
15	13 23 39.4	-16 41 39	9.9	1 51.9	13	12 37 25.8	-10 55 24	10.1	21 09.6
16	13 22 56.2	-16 38 27	9.8	1 47.2	14	12 37 03.2	-10 50 16	10.1	21 05.3
17	13 22 12.0	-16 35 04	9.8	1 42.6	15	12 36 42.0	-10 45 16	10.2	21 01.0
18	13 21 26.6	-16 31 31	9.8	1 37.9	16	12 36 22.2	-10 40 24	10.2	20 56.8
19	13 20 40.2	-16 27 47	9.8	1 33.2	17	12 36 03.9	-10 35 40	10.2	20 52.6
20	13 19 52.8	-16 23 53	9.8	1 28.5	18	12 35 46.9	-10 31 04	10.2	20 48.4
21	13 19 04.5	-16 19 49	9.7	1 23.7	19	12 35 31.4	-10 26 37	10.2	20 44.2
22	13 18 15.3	-16 15 35	9.7	1 19.0	20	12 35 17.4	-10 22 18	10.3	20 40.1
23	13 17 25.2	-16 11 11	9.7	1 14.2	21	12 35 04.7	-10 18 08	10.3	20 36.0
24	13 16 34.2	-16 06 38	9.7	1 09.4	22	12 34 53.5	-10 14 06	10.3	20 31.9
25	13 15 42.6	-16 01 55	9.7	1 04.7	23	12 34 43.6	-10 10 13	10.3	20 27.8
26	13 14 50.2	-15 57 03	9.6	0 59.9	24	12 34 35.2	-10 06 29	10.3	20 23.7
27	13 13 57.2	-15 52 02	9.6	0 55.0	25	12 34 28.2	-10 02 54	10.4	20 19.7
28	13 13 03.5	-15 46 52	9.6	0 50.2	26	12 34 22.6	-9 59 27	10.4	20 15.7
29	13 12 09.4	-15 41 33	9.6	0 45.4	27	12 34 18.3	-9 56 10	10.4	20 11.7
30	13 11 14.7	-15 36 06	9.6	0 40.6	28	12 34 15.5	-9 53 01	10.4	20 07.8
31	13 10 19.6	-15 30 31	9.5	0 35.7	<b>May</b> 29	12 34 14.0	-9 50 02	10.4	20 03.8
<b>Apr.</b> 1	13 09 24.1	-15 24 48	9.5	0 30.9	30	12 34 13.9	-9 47 11	10.5	19 59.9
2	13 08 28.4	-15 18 58	9.5	0 26.0	31	12 34 15.1	-9 44 30	10.5	19 56.0
3	13 07 32.3	-15 13 01	9.5	0 21.1	<b>June</b> 1	12 34 17.7	-9 41 57	10.5	19 52.1
4	13 06 36.1	-15 06 57	9.5	0 16.3	2	12 34 21.7	-9 39 34	10.5	19 48.3
5	13 05 39.8	-15 00 47	9.4	0 11.4	3	12 34 27.0	-9 37 19	10.5	19 44.5
6	13 04 43.4	-14 54 31	9.4	0 06.6	4	12 34 33.6	-9 35 14	10.6	19 40.7
7	13 03 47.0	-14 48 09	9.4	0 01.7	5	12 34 41.5	-9 33 18	10.6	19 36.9
8	13 02 50.7	-14 41 43	9.4	23 52.0	6	12 34 50.8	-9 31 31	10.6	19 33.1
<b>Apr.</b> 9	13 01 54.5	-14 35 11	9.4	23 47.1	<b>June</b> 7	12 35 01.3	-9 29 52	10.6	19 29.4

Second transit for Iris 2008 April 7<sup>d</sup> 23<sup>h</sup> 56<sup>m</sup>8

GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric		Vis. Mag.	Ephem- eris Transit	Date	Astrometric		Vis. Mag.	Ephem- eris Transit
	R.A.	Dec.				R.A.	Dec.		
	h m s	° / ' "				h m s	° / ' "		
<b>2008 Sept. 6</b>	3 07 46.3	+11 43 06	10.0	4 05.9	<b>2008 Nov. 4</b>	2 47 13.1	+11 13 25	8.5	23 48.3
<b>7</b>	3 08 18.2	+11 44 50	10.0	4 02.4	<b>5</b>	2 46 10.4	+11 11 58	8.5	23 43.4
<b>8</b>	3 08 48.4	+11 46 29	10.0	3 59.0	<b>6</b>	2 45 07.5	+11 10 34	8.5	23 38.4
<b>9</b>	3 09 17.0	+11 48 01	10.0	3 55.5	<b>7</b>	2 44 04.7	+11 09 13	8.5	23 33.4
<b>10</b>	3 09 43.9	+11 49 28	10.0	3 52.1	<b>8</b>	2 43 02.0	+11 07 55	8.5	23 28.5
<b>11</b>	3 10 09.0	+11 50 49	9.9	3 48.5	<b>9</b>	2 41 59.5	+11 06 42	8.5	23 23.5
<b>12</b>	3 10 32.5	+11 52 05	9.9	3 45.0	<b>10</b>	2 40 57.3	+11 05 33	8.5	23 18.5
<b>13</b>	3 10 54.2	+11 53 15	9.9	3 41.4	<b>11</b>	2 39 55.5	+11 04 29	8.6	23 13.6
<b>14</b>	3 11 14.2	+11 54 19	9.9	3 37.8	<b>12</b>	2 38 54.2	+11 03 29	8.6	23 08.6
<b>15</b>	3 11 32.3	+11 55 18	9.8	3 34.2	<b>13</b>	2 37 53.4	+11 02 34	8.6	23 03.7
<b>16</b>	3 11 48.7	+11 56 11	9.8	3 30.5	<b>14</b>	2 36 53.3	+11 01 45	8.7	22 58.8
<b>17</b>	3 12 03.2	+11 56 58	9.8	3 26.8	<b>15</b>	2 35 54.0	+11 01 01	8.7	22 53.9
<b>18</b>	3 12 15.8	+11 57 40	9.8	3 23.1	<b>16</b>	2 34 55.5	+11 00 23	8.7	22 49.0
<b>19</b>	3 12 26.5	+11 58 17	9.7	3 19.3	<b>17</b>	2 33 57.9	+10 59 51	8.7	22 44.1
<b>20</b>	3 12 35.3	+11 58 48	9.7	3 15.5	<b>18</b>	2 33 01.3	+10 59 26	8.8	22 39.3
<b>21</b>	3 12 42.2	+11 59 13	9.7	3 11.7	<b>19</b>	2 32 05.7	+10 59 07	8.8	22 34.5
<b>22</b>	3 12 47.1	+11 59 33	9.7	3 07.9	<b>20</b>	2 31 11.4	+10 58 55	8.8	22 29.6
<b>23</b>	3 12 50.1	+11 59 47	9.6	3 04.0	<b>21</b>	2 30 18.2	+10 58 50	8.9	22 24.9
<b>Sept. 24</b>	3 12 51.0	+11 59 56	9.6	3 00.1	<b>22</b>	2 29 26.4	+10 58 53	8.9	22 20.1
<b>25</b>	3 12 49.9	+12 00 00	9.6	2 56.1	<b>23</b>	2 28 36.0	+10 59 03	8.9	22 15.3
<b>26</b>	3 12 46.8	+11 59 58	9.6	2 52.1	<b>24</b>	2 27 47.0	+10 59 21	8.9	22 10.6
<b>27</b>	3 12 41.7	+11 59 52	9.5	2 48.1	<b>25</b>	2 26 59.5	+10 59 47	9.0	22 05.9
<b>28</b>	3 12 34.5	+11 59 40	9.5	2 44.0	<b>26</b>	2 26 13.6	+11 00 21	9.0	22 01.3
<b>29</b>	3 12 25.3	+11 59 23	9.5	2 40.0	<b>27</b>	2 25 29.3	+11 01 03	9.0	21 56.6
<b>30</b>	3 12 14.0	+11 59 01	9.5	2 35.8	<b>28</b>	2 24 46.8	+11 01 54	9.0	21 52.0
<b>Oct. 1</b>	3 12 00.7	+11 58 34	9.4	2 31.7	<b>29</b>	2 24 06.0	+11 02 53	9.1	21 47.4
<b>2</b>	3 11 45.3	+11 58 03	9.4	2 27.5	<b>30</b>	2 23 27.0	+11 04 02	9.1	21 42.9
<b>3</b>	3 11 27.9	+11 57 27	9.4	2 23.3	<b>Dec. 1</b>	2 22 49.9	+11 05 19	9.1	21 38.4
<b>4</b>	3 11 08.4	+11 56 47	9.4	2 19.0	<b>2</b>	2 22 14.6	+11 06 45	9.1	21 33.9
<b>5</b>	3 10 46.9	+11 56 02	9.3	2 14.7	<b>3</b>	2 21 41.3	+11 08 20	9.2	21 29.4
<b>6</b>	3 10 23.4	+11 55 13	9.3	2 10.4	<b>4</b>	2 21 09.9	+11 10 04	9.2	21 25.0
<b>7</b>	3 09 58.0	+11 54 20	9.3	2 06.0	<b>5</b>	2 20 40.5	+11 11 57	9.2	21 20.6
<b>8</b>	3 09 30.5	+11 53 23	9.2	2 01.6	<b>6</b>	2 20 13.1	+11 13 59	9.2	21 16.2
<b>9</b>	3 09 01.1	+11 52 22	9.2	1 57.2	<b>7</b>	2 19 47.8	+11 16 10	9.3	21 11.9
<b>10</b>	3 08 29.8	+11 51 17	9.2	1 52.8	<b>8</b>	2 19 24.5	+11 18 30	9.3	21 07.6
<b>11</b>	3 07 56.6	+11 50 09	9.2	1 48.3	<b>9</b>	2 19 03.3	+11 21 00	9.3	21 03.4
<b>12</b>	3 07 21.5	+11 48 57	9.1	1 43.8	<b>10</b>	2 18 44.2	+11 23 38	9.3	20 59.2
<b>13</b>	3 06 44.6	+11 47 42	9.1	1 39.2	<b>11</b>	2 18 27.1	+11 26 26	9.4	20 55.0
<b>14</b>	3 06 05.9	+11 46 24	9.1	1 34.7	<b>12</b>	2 18 12.1	+11 29 22	9.4	20 50.8
<b>15</b>	3 05 25.4	+11 45 03	9.0	1 30.0	<b>13</b>	2 17 59.2	+11 32 27	9.4	20 46.7
<b>16</b>	3 04 43.2	+11 43 40	9.0	1 25.4	<b>14</b>	2 17 48.4	+11 35 41	9.4	20 42.6
<b>17</b>	3 03 59.3	+11 42 13	9.0	1 20.8	<b>15</b>	2 17 39.7	+11 39 04	9.5	20 38.6
<b>18</b>	3 03 13.8	+11 40 45	9.0	1 16.1	<b>16</b>	2 17 33.1	+11 42 36	9.5	20 34.6
<b>19</b>	3 02 26.7	+11 39 14	8.9	1 11.4	<b>17</b>	2 17 28.5	+11 46 16	9.5	20 30.6
<b>20</b>	3 01 38.0	+11 37 41	8.9	1 06.6	<b>Dec. 18</b>	2 17 26.1	+11 50 04	9.5	20 26.7
<b>21</b>	3 00 47.9	+11 36 06	8.9	1 01.9	<b>19</b>	2 17 25.7	+11 54 01	9.6	20 22.7
<b>22</b>	2 59 56.4	+11 34 29	8.8	0 57.1	<b>20</b>	2 17 27.4	+11 58 07	9.6	20 18.9
<b>23</b>	2 59 03.5	+11 32 52	8.8	0 52.3	<b>21</b>	2 17 31.1	+12 02 20	9.6	20 15.0
<b>24</b>	2 58 09.3	+11 31 13	8.8	0 47.4	<b>22</b>	2 17 37.0	+12 06 42	9.6	20 11.2
<b>25</b>	2 57 13.9	+11 29 34	8.7	0 42.6	<b>23</b>	2 17 44.8	+12 11 12	9.7	20 07.5
<b>26</b>	2 56 17.5	+11 27 54	8.7	0 37.7	<b>24</b>	2 17 54.7	+12 15 50	9.7	20 03.7
<b>27</b>	2 55 19.9	+11 26 14	8.7	0 32.8	<b>25</b>	2 18 06.7	+12 20 36	9.7	20 00.0
<b>28</b>	2 54 21.4	+11 24 34	8.7	0 27.9	<b>26</b>	2 18 20.6	+12 25 29	9.7	19 56.3
<b>29</b>	2 53 22.1	+11 22 54	8.6	0 23.0	<b>27</b>	2 18 36.6	+12 30 30	9.7	19 52.7
<b>30</b>	2 52 22.0	+11 21 16	8.6	0 18.1	<b>28</b>	2 18 54.5	+12 35 39	9.8	19 49.1
<b>31</b>	2 51 21.2	+11 19 38	8.6	0 13.1	<b>29</b>	2 19 14.4	+12 40 55	9.8	19 45.5
<b>Nov. 1</b>	2 50 19.8	+11 18 02	8.5	0 08.2	<b>30</b>	2 19 36.3	+12 46 18	9.8	19 42.0
<b>2</b>	2 49 17.9	+11 16 27	8.5	0 03.2	<b>31</b>	2 20 00.1	+12 51 48	9.8	19 38.5
<b>3</b>	2 48 15.6	+11 14 55	8.5	23 53.3	<b>2009 Jan. 1</b>	2 20 25.8	+12 57 25	9.8	19 35.0
<b>Nov. 4</b>	2 47 13.1	+11 13 25	8.5	23 48.3	<b>Jan. 2</b>	2 20 53.4	+13 03 09	9.9	19 31.5

Second transit for Metis 2008 November 2<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>3

GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric		Vis. Mag.	Ephem-eris Transit	Date	Astrometric		Vis. Mag.	Ephem-eris Transit
	R.A.	Dec.				R.A.	Dec.		
	h m s ° / "	h m s ° / "				h m s ° / "	h m s ° / "		
<b>2008 Oct. 5</b>	5 07 48.6	+25 50 13	11.4	4 11.5	<b>2008 Dec. 3</b>	4 38 37.0	+24 59 21	10.3	23 45.7
6	5 07 53.7	+25 50 36	11.3	4 07.7	4	4 37 44.7	+24 57 00	10.3	23 40.9
7	5 07 57.6	+25 50 57	11.3	4 03.8	5	4 36 52.5	+24 54 36	10.3	23 36.1
8	5 08 00.1	+25 51 16	11.3	3 59.9	6	4 36 00.4	+24 52 10	10.3	23 31.3
<b>Oct. 9</b>	5 08 01.3	+25 51 34	11.3	3 56.0	7	4 35 08.5	+24 49 43	10.3	23 26.5
10	5 08 01.3	+25 51 49	11.3	3 52.1	8	4 34 16.8	+24 47 13	10.4	23 21.7
11	5 07 59.8	+25 52 03	11.3	3 48.1	9	4 33 25.4	+24 44 42	10.4	23 16.9
12	5 07 57.1	+25 52 14	11.3	3 44.1	10	4 32 34.3	+24 42 09	10.4	23 12.1
13	5 07 53.0	+25 52 23	11.2	3 40.1	11	4 31 43.6	+24 39 34	10.4	23 07.4
14	5 07 47.6	+25 52 31	11.2	3 36.1	12	4 30 53.3	+24 36 58	10.5	23 02.6
15	5 07 40.9	+25 52 36	11.2	3 32.1	13	4 30 03.5	+24 34 21	10.5	22 57.9
16	5 07 32.8	+25 52 39	11.2	3 28.0	14	4 29 14.2	+24 31 43	10.5	22 53.1
17	5 07 23.3	+25 52 40	11.2	3 23.9	15	4 28 25.4	+24 29 04	10.5	22 48.4
18	5 07 12.5	+25 52 38	11.2	3 19.8	16	4 27 37.3	+24 26 24	10.5	22 43.7
19	5 07 00.4	+25 52 34	11.2	3 15.6	17	4 26 49.7	+24 23 44	10.6	22 39.0
20	5 06 46.9	+25 52 28	11.1	3 11.5	18	4 26 02.9	+24 21 03	10.6	22 34.3
21	5 06 32.0	+25 52 20	11.1	3 07.3	19	4 25 16.8	+24 18 23	10.6	22 29.6
22	5 06 15.8	+25 52 09	11.1	3 03.1	20	4 24 31.5	+24 15 42	10.6	22 24.9
23	5 05 58.2	+25 51 55	11.1	2 58.9	21	4 23 46.9	+24 13 01	10.6	22 20.3
24	5 05 39.3	+25 51 39	11.1	2 54.6	22	4 23 03.2	+24 10 20	10.7	22 15.6
25	5 05 19.1	+25 51 21	11.1	2 50.4	23	4 22 20.4	+24 07 40	10.7	22 11.0
26	5 04 57.5	+25 50 59	11.0	2 46.1	24	4 21 38.5	+24 05 00	10.7	22 06.4
27	5 04 34.6	+25 50 36	11.0	2 41.8	25	4 20 57.6	+24 02 21	10.7	22 01.8
28	5 04 10.4	+25 50 09	11.0	2 37.4	26	4 20 17.6	+23 59 43	10.7	21 57.2
29	5 03 44.9	+25 49 39	11.0	2 33.1	27	4 19 38.7	+23 57 07	10.8	21 52.6
30	5 03 18.1	+25 49 07	11.0	2 28.7	28	4 19 00.8	+23 54 31	10.8	21 48.1
<b>Nov. 31</b>	5 02 50.1	+25 48 32	10.9	2 24.3	29	4 18 24.0	+23 51 57	10.8	21 43.6
1	5 02 20.8	+25 47 54	10.9	2 19.9	30	4 17 48.3	+23 49 24	10.8	21 39.1
2	5 01 50.2	+25 47 13	10.9	2 15.4	31	4 17 13.8	+23 46 53	10.8	21 34.6
3	5 01 18.5	+25 46 29	10.9	2 11.0	<b>2009 Jan. 1</b>	4 16 40.4	+23 44 24	10.8	21 30.1
4	5 00 45.5	+25 45 42	10.9	2 06.5	2	4 16 08.2	+23 41 57	10.9	21 25.7
5	5 00 11.5	+25 44 52	10.9	2 02.0	3	4 15 37.3	+23 39 32	10.9	21 21.2
6	4 59 36.2	+25 43 58	10.8	1 57.5	4	4 15 07.5	+23 37 09	10.9	21 16.8
7	4 58 59.9	+25 43 02	10.8	1 52.9	5	4 14 39.0	+23 34 49	10.9	21 12.4
8	4 58 22.5	+25 42 02	10.8	1 48.4	6	4 14 11.8	+23 32 31	10.9	21 08.1
9	4 57 44.0	+25 40 59	10.8	1 43.8	7	4 13 45.8	+23 30 16	10.9	21 03.7
10	4 57 04.5	+25 39 52	10.8	1 39.2	8	4 13 21.1	+23 28 03	11.0	20 59.4
11	4 56 24.0	+25 38 43	10.7	1 34.6	9	4 12 57.7	+23 25 53	11.0	20 55.1
12	4 55 42.5	+25 37 30	10.7	1 30.0	10	4 12 35.6	+23 23 46	11.0	20 50.8
13	4 55 00.1	+25 36 14	10.7	1 25.4	11	4 12 14.8	+23 21 42	11.0	20 46.6
14	4 54 16.8	+25 34 54	10.7	1 20.7	12	4 11 55.4	+23 19 41	11.0	20 42.3
15	4 53 32.6	+25 33 31	10.7	1 16.1	13	4 11 37.2	+23 17 44	11.0	20 38.1
16	4 52 47.6	+25 32 04	10.7	1 11.4	14	4 11 20.4	+23 15 49	11.1	20 33.9
17	4 52 01.9	+25 30 35	10.6	1 06.7	15	4 11 04.9	+23 13 58	11.1	20 29.8
18	4 51 15.3	+25 29 01	10.6	1 02.0	16	4 10 50.8	+23 12 10	11.1	20 25.6
19	4 50 28.1	+25 27 25	10.6	0 57.3	17	4 10 38.0	+23 10 25	11.1	20 21.5
20	4 49 40.1	+25 25 45	10.6	0 52.5	18	4 10 26.6	+23 08 44	11.1	20 17.4
21	4 48 51.6	+25 24 02	10.5	0 47.8	19	4 10 16.5	+23 07 07	11.1	20 13.3
22	4 48 02.4	+25 22 15	10.5	0 43.1	20	4 10 07.7	+23 05 33	11.2	20 09.3
23	4 47 12.7	+25 20 25	10.5	0 38.3	21	4 10 00.3	+23 04 03	11.2	20 05.2
24	4 46 22.5	+25 18 32	10.5	0 33.5	22	4 09 54.3	+23 02 36	11.2	20 01.2
25	4 45 31.9	+25 16 36	10.5	0 28.8	23	4 09 49.6	+23 01 13	11.2	19 57.2
26	4 44 40.9	+25 14 37	10.4	0 24.0	24	4 09 46.2	+22 59 54	11.2	19 53.2
27	4 43 49.5	+25 12 34	10.4	0 19.2	25	4 09 44.2	+22 58 38	11.2	19 49.3
28	4 42 57.9	+25 10 29	10.4	0 14.4	<b>Jan. 26</b>	4 09 43.6	+22 57 26	11.2	19 45.4
29	4 42 06.0	+25 08 21	10.4	0 09.6	27	4 09 44.3	+22 56 18	11.3	19 41.5
30	4 41 13.9	+25 06 10	10.3	0 04.8	28	4 09 46.3	+22 55 14	11.3	19 37.6
<b>Dec. 1</b>	4 40 21.6	+25 03 56	10.3	0 00.0	29	4 09 49.7	+22 54 13	11.3	19 33.7
2	4 39 29.3	+25 01 40	10.3	23 50.4	30	4 09 54.3	+22 53 16	11.3	19 29.9
<b>Dec. 3</b>	4 38 37.0	+24 59 21	10.3	23 45.7	<b>Jan. 31</b>	4 10 00.3	+22 52 23	11.3	19 26.1

Second transit for Hygiea 2008 December 1<sup>d</sup> 23<sup>h</sup> 55<sup>m</sup>2



EUNOMIA, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric					Vis. Mag.	Ephem- eris Transit	Date	Astrometric					Vis. Mag.	Ephem- eris Transit
	R.A.			Dec.					R.A.			Dec.			
	h	m	s	°	'				"	h	m	s	°		
<b>2007 Nov.</b> 12	7 59	35.9		+25 56	08	9.4	4 36.4	<b>2008 Jan.</b> 10	7 26	57.6		+23 14	26	8.2	0 11.8
13	7 59	57.9		+25 52	42	9.4	4 32.8	11	7 25	48.4		+23 11	25	8.2	0 06.7
14	8 00	18.0		+25 49	18	9.3	4 29.2	12	7 24	39.5		+23 08	21	8.2	0 01.7
15	8 00	36.1		+25 45	57	9.3	4 25.6	13	7 23	30.9		+23 05	15	8.2	23 51.5
16	8 00	52.2		+25 42	38	9.3	4 21.9	14	7 22	22.8		+23 02	07	8.3	23 46.5
17	8 01	06.3		+25 39	21	9.3	4 18.2	15	7 21	15.2		+22 58	56	8.3	23 41.5
18	8 01	18.3		+25 36	07	9.3	4 14.5	16	7 20	08.2		+22 55	44	8.4	23 36.4
19	8 01	28.3		+25 32	56	9.3	4 10.7	17	7 19	01.9		+22 52	29	8.4	23 31.4
20	8 01	36.2		+25 29	46	9.2	4 06.9	18	7 17	56.5		+22 49	13	8.4	23 26.4
21	8 01	42.1		+25 26	40	9.2	4 03.1	19	7 16	51.9		+22 45	54	8.5	23 21.4
22	8 01	45.9		+25 23	36	9.2	3 59.2	20	7 15	48.2		+22 42	34	8.5	23 16.5
<b>Nov.</b> 23	8 01	47.6		+25 20	34	9.2	3 55.3	21	7 14	45.5		+22 39	12	8.5	23 11.5
24	8 01	47.2		+25 17	34	9.2	3 51.3	22	7 13	43.9		+22 35	49	8.6	23 06.6
25	8 01	44.7		+25 14	37	9.2	3 47.4	23	7 12	43.5		+22 32	24	8.6	23 01.7
26	8 01	40.1		+25 11	42	9.1	3 43.4	24	7 11	44.3		+22 28	58	8.6	22 56.8
27	8 01	33.3		+25 08	50	9.1	3 39.3	25	7 10	46.3		+22 25	31	8.7	22 51.9
28	8 01	24.5		+25 06	00	9.1	3 35.2	26	7 09	49.7		+22 22	02	8.7	22 47.0
29	8 01	13.5		+25 03	12	9.1	3 31.1	27	7 08	54.5		+22 18	33	8.7	22 42.2
30	8 01	00.3		+25 00	26	9.1	3 26.9	28	7 08	00.7		+22 15	03	8.7	22 37.4
<b>Dec.</b> 1	8 00	45.1		+24 57	43	9.1	3 22.8	29	7 07	08.4		+22 11	32	8.8	22 32.6
2	8 00	27.6		+24 55	01	9.0	3 18.5	30	7 06	17.7		+22 08	01	8.8	22 27.9
3	8 00	08.1		+24 52	22	9.0	3 14.3	31	7 05	28.5		+22 04	29	8.8	22 23.2
4	7 59	46.4		+24 49	44	9.0	3 10.0	<b>Feb.</b> 1	7 04	41.0		+22 00	57	8.9	22 18.5
5	7 59	22.6		+24 47	08	9.0	3 05.6	2	7 03	55.1		+21 57	25	8.9	22 13.8
6	7 58	56.6		+24 44	34	9.0	3 01.3	3	7 03	11.0		+21 53	53	8.9	22 09.2
7	7 58	28.6		+24 42	01	8.9	2 56.9	4	7 02	28.6		+21 50	20	8.9	22 04.6
8	7 57	58.5		+24 39	30	8.9	2 52.4	5	7 01	48.0		+21 46	48	9.0	22 00.0
9	7 57	26.4		+24 37	01	8.9	2 48.0	6	7 01	09.2		+21 43	16	9.0	21 55.4
10	7 56	52.2		+24 34	32	8.9	2 43.5	7	7 00	32.3		+21 39	44	9.0	21 50.9
11	7 56	16.0		+24 32	05	8.9	2 38.9	8	6 59	57.2		+21 36	12	9.0	21 46.4
12	7 55	37.9		+24 29	38	8.8	2 34.4	9	6 59	24.0		+21 32	41	9.1	21 42.0
13	7 54	57.8		+24 27	12	8.8	2 29.8	10	6 58	52.7		+21 29	11	9.1	21 37.6
14	7 54	15.8		+24 24	47	8.8	2 25.1	11	6 58	23.4		+21 25	41	9.1	21 33.2
15	7 53	32.0		+24 22	22	8.8	2 20.5	12	6 57	55.9		+21 22	12	9.1	21 28.8
16	7 52	46.4		+24 19	58	8.8	2 15.8	13	6 57	30.4		+21 18	43	9.2	21 24.5
17	7 51	59.0		+24 17	33	8.7	2 11.1	14	6 57	06.8		+21 15	15	9.2	21 20.2
18	7 51	09.9		+24 15	09	8.7	2 06.3	15	6 56	45.2		+21 11	48	9.2	21 15.9
19	7 50	19.1		+24 12	44	8.7	2 01.6	16	6 56	25.5		+21 08	22	9.2	21 11.7
20	7 49	26.7		+24 10	19	8.7	1 56.8	17	6 56	07.8		+21 04	56	9.3	21 07.5
21	7 48	32.8		+24 07	54	8.7	1 51.9	18	6 55	51.9		+21 01	32	9.3	21 03.3
22	7 47	37.4		+24 05	28	8.6	1 47.1	19	6 55	38.0		+20 58	09	9.3	20 59.2
23	7 46	40.5		+24 03	01	8.6	1 42.2	20	6 55	26.0		+20 54	46	9.3	20 55.1
24	7 45	42.4		+24 00	33	8.6	1 37.3	21	6 55	15.9		+20 51	25	9.4	20 51.0
25	7 44	42.9		+23 58	03	8.6	1 32.4	22	6 55	07.7		+20 48	04	9.4	20 47.0
26	7 43	42.1		+23 55	33	8.6	1 27.4	23	6 55	01.4		+20 44	45	9.4	20 43.0
27	7 42	40.3		+23 53	01	8.5	1 22.5	24	6 54	56.9		+20 41	27	9.4	20 39.0
28	7 41	37.3		+23 50	28	8.5	1 17.5	<b>Feb.</b> 25	6 54	54.3		+20 38	09	9.5	20 35.1
29	7 40	33.3		+23 47	54	8.5	1 12.5	26	6 54	53.5		+20 34	53	9.5	20 31.1
30	7 39	28.4		+23 45	17	8.5	1 07.5	27	6 54	54.5		+20 31	38	9.5	20 27.2
31	7 38	22.6		+23 42	39	8.5	1 02.5	28	6 54	57.3		+20 28	23	9.5	20 23.4
<b>2008 Jan.</b> 1	7 37	16.1		+23 40	00	8.4	0 57.5	29	6 55	01.9		+20 25	10	9.6	20 19.5
2	7 36	08.9		+23 37	18	8.4	0 52.4	<b>Mar.</b> 1	6 55	08.2		+20 21	57	9.6	20 15.7
3	7 35	01.0		+23 34	34	8.4	0 47.4	2	6 55	16.3		+20 18	46	9.6	20 12.0
4	7 33	52.7		+23 31	48	8.4	0 42.3	3	6 55	26.2		+20 15	35	9.6	20 08.2
5	7 32	44.0		+23 29	00	8.3	0 37.2	4	6 55	37.8		+20 12	25	9.6	20 04.5
6	7 31	35.0		+23 26	10	8.3	0 32.1	5	6 55	51.0		+20 09	16	9.7	20 00.8
7	7 30	25.7		+23 23	17	8.3	0 27.1	6	6 56	05.9		+20 06	07	9.7	19 57.2
8	7 29	16.3		+23 20	23	8.2	0 22.0	7	6 56	22.5		+20 02	59	9.7	19 53.5
9	7 28	06.9		+23 17	26	8.2	0 16.9	8	6 56	40.7		+19 59	52	9.7	19 49.9
<b>Jan.</b> 10	7 26	57.6		+23 14	26	8.2	0 11.8	<b>Mar.</b> 9	6 57	00.6		+19 56	45	9.8	19 46.3

Second transit for Eunomia 2008 January 12<sup>d</sup> 23<sup>h</sup> 56<sup>m</sup>6

GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric					Vis. Mag.	Ephem- eris Transit	Date	Astrometric					Vis. Mag.	Ephem- eris Transit
	R.A.		Dec.		h m				R.A.		Dec.		h m		
	h m s	° ' "	° ' "	h m s					° ' "	h m s	° ' "				
<b>2008 Mar. 11</b>	15 35	17.2	-15 42	50	11.5	4 19.0	<b>2008 May 9</b>	15 09	44.2	-13 08	47	10.4	0 01.5		
<b>12</b>	15 35	25.2	-15 42	01	11.5	4 15.2	<b>10</b>	15 08	55.4	-13 05	15	10.4	23 52.0		
<b>13</b>	15 35	31.9	-15 41	09	11.5	4 11.3	<b>11</b>	15 08	06.6	-13 01	45	10.4	23 47.3		
<b>14</b>	15 35	37.4	-15 40	11	11.4	4 07.5	<b>12</b>	15 07	17.8	-12 58	16	10.4	23 42.5		
<b>15</b>	15 35	41.6	-15 39	09	11.4	4 03.6	<b>13</b>	15 06	29.2	-12 54	49	10.4	23 37.8		
<b>16</b>	15 35	44.5	-15 38	03	11.4	3 59.8	<b>14</b>	15 05	40.6	-12 51	24	10.5	23 33.1		
<b>Mar. 17</b>	15 35	46.1	-15 36	52	11.4	3 55.8	<b>15</b>	15 04	52.3	-12 48	02	10.5	23 28.3		
<b>18</b>	15 35	46.4	-15 35	36	11.4	3 51.9	<b>16</b>	15 04	04.2	-12 44	41	10.5	23 23.6		
<b>19</b>	15 35	45.4	-15 34	16	11.4	3 48.0	<b>17</b>	15 03	16.4	-12 41	23	10.5	23 18.9		
<b>20</b>	15 35	43.2	-15 32	52	11.3	3 44.0	<b>18</b>	15 02	28.9	-12 38	08	10.5	23 14.2		
<b>21</b>	15 35	39.6	-15 31	23	11.3	3 40.0	<b>19</b>	15 01	41.8	-12 34	56	10.6	23 09.5		
<b>22</b>	15 35	34.7	-15 29	50	11.3	3 36.0	<b>20</b>	15 00	55.0	-12 31	47	10.6	23 04.8		
<b>23</b>	15 35	28.5	-15 28	12	11.3	3 31.9	<b>21</b>	15 00	08.7	-12 28	41	10.6	23 00.1		
<b>24</b>	15 35	21.0	-15 26	30	11.3	3 27.9	<b>22</b>	14 59	22.9	-12 25	39	10.6	22 55.4		
<b>25</b>	15 35	12.2	-15 24	44	11.3	3 23.8	<b>23</b>	14 58	37.6	-12 22	40	10.6	22 50.7		
<b>26</b>	15 35	02.1	-15 22	53	11.2	3 19.7	<b>24</b>	14 57	52.9	-12 19	45	10.6	22 46.1		
<b>27</b>	15 34	50.7	-15 20	58	11.2	3 15.6	<b>25</b>	14 57	08.8	-12 16	54	10.7	22 41.4		
<b>28</b>	15 34	38.0	-15 18	59	11.2	3 11.4	<b>26</b>	14 56	25.3	-12 14	07	10.7	22 36.8		
<b>29</b>	15 34	23.9	-15 16	55	11.2	3 07.3	<b>27</b>	14 55	42.5	-12 11	25	10.7	22 32.1		
<b>30</b>	15 34	08.6	-15 14	47	11.2	3 03.1	<b>28</b>	14 55	00.4	-12 08	47	10.7	22 27.5		
<b>31</b>	15 33	52.0	-15 12	35	11.1	2 58.9	<b>29</b>	14 54	19.1	-12 06	13	10.7	22 22.9		
<b>Apr. 1</b>	15 33	34.0	-15 10	19	11.1	2 54.6	<b>30</b>	14 53	38.5	-12 03	45	10.8	22 18.3		
<b>2</b>	15 33	14.8	-15 07	59	11.1	2 50.4	<b>31</b>	14 52	58.8	-12 01	21	10.8	22 13.8		
<b>3</b>	15 32	54.4	-15 05	34	11.1	2 46.1	<b>June 1</b>	14 52	19.9	-11 59	02	10.8	22 09.2		
<b>4</b>	15 32	32.6	-15 03	06	11.1	2 41.8	<b>2</b>	14 51	41.9	-11 56	48	10.8	22 04.6		
<b>5</b>	15 32	09.6	-15 00	34	11.1	2 37.5	<b>3</b>	14 51	04.8	-11 54	40	10.8	22 00.1		
<b>6</b>	15 31	45.4	-14 57	58	11.0	2 33.2	<b>4</b>	14 50	28.6	-11 52	37	10.8	21 55.6		
<b>7</b>	15 31	20.0	-14 55	19	11.0	2 28.8	<b>5</b>	14 49	53.5	-11 50	40	10.9	21 51.1		
<b>8</b>	15 30	53.3	-14 52	35	11.0	2 24.4	<b>6</b>	14 49	19.3	-11 48	48	10.9	21 46.6		
<b>9</b>	15 30	25.5	-14 49	49	11.0	2 20.0	<b>7</b>	14 48	46.2	-11 47	03	10.9	21 42.1		
<b>10</b>	15 29	56.5	-14 46	58	11.0	2 15.6	<b>8</b>	14 48	14.1	-11 45	23	10.9	21 37.7		
<b>11</b>	15 29	26.4	-14 44	05	10.9	2 11.2	<b>9</b>	14 47	43.0	-11 43	49	10.9	21 33.3		
<b>12</b>	15 28	55.2	-14 41	08	10.9	2 06.7	<b>10</b>	14 47	13.1	-11 42	21	10.9	21 28.9		
<b>13</b>	15 28	22.8	-14 38	08	10.9	2 02.3	<b>11</b>	14 46	44.3	-11 40	59	11.0	21 24.5		
<b>14</b>	15 27	49.5	-14 35	05	10.9	1 57.8	<b>12</b>	14 46	16.6	-11 39	43	11.0	21 20.1		
<b>15</b>	15 27	15.0	-14 31	59	10.9	1 53.3	<b>13</b>	14 45	50.0	-11 38	33	11.0	21 15.7		
<b>16</b>	15 26	39.6	-14 28	50	10.8	1 48.8	<b>14</b>	14 45	24.6	-11 37	30	11.0	21 11.4		
<b>17</b>	15 26	03.2	-14 25	39	10.8	1 44.2	<b>15</b>	14 45	00.4	-11 36	32	11.0	21 07.1		
<b>18</b>	15 25	25.9	-14 22	25	10.8	1 39.7	<b>16</b>	14 44	37.4	-11 35	41	11.0	21 02.8		
<b>19</b>	15 24	47.6	-14 19	08	10.8	1 35.1	<b>17</b>	14 44	15.5	-11 34	56	11.1	20 58.5		
<b>20</b>	15 24	08.4	-14 15	49	10.8	1 30.5	<b>18</b>	14 43	54.8	-11 34	18	11.1	20 54.3		
<b>21</b>	15 23	28.4	-14 12	28	10.7	1 25.9	<b>19</b>	14 43	35.3	-11 33	46	11.1	20 50.0		
<b>22</b>	15 22	47.6	-14 09	05	10.7	1 21.3	<b>20</b>	14 43	17.1	-11 33	20	11.1	20 45.8		
<b>23</b>	15 22	05.9	-14 05	40	10.7	1 16.7	<b>21</b>	14 43	00.1	-11 33	00	11.1	20 41.6		
<b>24</b>	15 21	23.6	-14 02	13	10.7	1 12.1	<b>22</b>	14 42	44.2	-11 32	47	11.1	20 37.4		
<b>25</b>	15 20	40.4	-13 58	44	10.7	1 07.4	<b>23</b>	14 42	29.6	-11 32	40	11.1	20 33.3		
<b>26</b>	15 19	56.6	-13 55	14	10.6	1 02.8	<b>24</b>	14 42	16.3	-11 32	39	11.2	20 29.1		
<b>27</b>	15 19	12.2	-13 51	43	10.6	0 58.1	<b>25</b>	14 42	04.2	-11 32	45	11.2	20 25.0		
<b>28</b>	15 18	27.2	-13 48	10	10.6	0 53.4	<b>26</b>	14 41	53.3	-11 32	57	11.2	20 20.9		
<b>29</b>	15 17	41.5	-13 44	36	10.6	0 48.7	<b>27</b>	14 41	43.7	-11 33	15	11.2	20 16.9		
<b>30</b>	15 16	55.4	-13 41	02	10.6	0 44.0	<b>28</b>	14 41	35.3	-11 33	40	11.2	20 12.8		
<b>May 1</b>	15 16	08.8	-13 37	27	10.5	0 39.3	<b>29</b>	14 41	28.1	-11 34	11	11.2	20 08.8		
<b>2</b>	15 15	21.8	-13 33	51	10.5	0 34.6	<b>30</b>	14 41	22.2	-11 34	48	11.3	20 04.8		
<b>3</b>	15 14	34.3	-13 30	15	10.5	0 29.9	<b>July 1</b>	14 41	17.6	-11 35	31	11.3	20 00.8		
<b>4</b>	15 13	46.5	-13 26	40	10.5	0 25.2	<b>2</b>	14 41	14.2	-11 36	20	11.3	19 56.8		
<b>5</b>	15 12	58.5	-13 23	04	10.4	0 20.4	<b>3</b>	14 41	12.1	-11 37	16	11.3	19 52.8		
<b>6</b>	15 12	10.1	-13 19	29	10.4	0 15.7	<b>July 4</b>	14 41	11.2	-11 38	17	11.3	19 48.9		
<b>7</b>	15 11	21.6	-13 15	54	10.4	0 11.0	<b>5</b>	14 41	11.5	-11 39	25	11.3	19 45.0		
<b>8</b>	15 10	33.0	-13 12	20	10.4	0 06.2	<b>6</b>	14 41	13.1	-11 40	39	11.3	19 41.1		
<b>May 9</b>	15 09	44.2	-13 08	47	10.4	0 01.5	<b>July 7</b>	14 41	16.0	-11 41	58	11.4	19 37.2		

Second transit for Psyche 2008 May 9<sup>d</sup> 23<sup>h</sup> 56<sup>m</sup>8

EUROPA, 2008  
GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric		Vis. Mag.	Ephem- eris Transit	Date	Astrometric		Vis. Mag.	Ephem- eris Transit
	R.A.	Dec.				R.A.	Dec.		
	h m s	° / ' "				h m s	° / ' "		
<b>2008 July 23</b>	0 23 41.2	- 3 41 42	11.9	4 19.1	<b>2008 Sept. 20</b>	0 03 58.2	- 8 30 17	10.8	0 07.4
<b>24</b>	0 23 52.1	- 3 43 37	11.8	4 15.3	<b>21</b>	0 03 15.4	- 8 36 16	10.8	0 02.8
<b>25</b>	0 24 02.0	- 3 45 39	11.8	4 11.5	<b>22</b>	0 02 32.4	- 8 42 13	10.8	23 53.5
<b>26</b>	0 24 10.7	- 3 47 49	11.8	4 07.7	<b>23</b>	0 01 49.4	- 8 48 05	10.8	23 48.8
<b>27</b>	0 24 18.3	- 3 50 07	11.8	4 03.9	<b>24</b>	0 01 06.4	- 8 53 52	10.8	23 44.2
<b>28</b>	0 24 24.8	- 3 52 33	11.8	4 00.1	<b>25</b>	0 00 23.4	- 8 59 35	10.9	23 39.5
<b>29</b>	0 24 30.1	- 3 55 07	11.8	3 56.3	<b>26</b>	23 59 40.4	- 9 05 13	10.9	23 34.9
<b>30</b>	0 24 34.4	- 3 57 49	11.7	3 52.4	<b>27</b>	23 58 57.5	- 9 10 45	10.9	23 30.3
<b>31</b>	0 24 37.4	- 4 00 38	11.7	3 48.5	<b>28</b>	23 58 14.8	- 9 16 12	10.9	23 25.6
<b>Aug. 1</b>	0 24 39.3	- 4 03 36	11.7	3 44.6	<b>29</b>	23 57 32.3	- 9 21 33	10.9	23 21.0
<b>Aug. 2</b>	0 24 40.1	- 4 06 41	11.7	3 40.7	<b>30</b>	23 56 50.0	- 9 26 47	10.9	23 16.4
<b>3</b>	0 24 39.7	- 4 09 54	11.7	3 36.7	<b>Oct. 1</b>	23 56 08.1	- 9 31 55	11.0	23 11.7
<b>4</b>	0 24 38.1	- 4 13 15	11.7	3 32.8	<b>2</b>	23 55 26.4	- 9 36 56	11.0	23 07.1
<b>5</b>	0 24 35.4	- 4 16 44	11.6	3 28.8	<b>3</b>	23 54 45.2	- 9 41 50	11.0	23 02.5
<b>6</b>	0 24 31.5	- 4 20 20	11.6	3 24.8	<b>4</b>	23 54 04.4	- 9 46 36	11.0	22 57.9
<b>7</b>	0 24 26.4	- 4 24 03	11.6	3 20.8	<b>5</b>	23 53 24.0	- 9 51 15	11.0	22 53.3
<b>8</b>	0 24 20.2	- 4 27 54	11.6	3 16.7	<b>6</b>	23 52 44.2	- 9 55 46	11.0	22 48.7
<b>9</b>	0 24 12.8	- 4 31 52	11.6	3 12.7	<b>7</b>	23 52 04.9	- 10 00 09	11.1	22 44.2
<b>10</b>	0 24 04.2	- 4 35 58	11.6	3 08.6	<b>8</b>	23 51 26.2	- 10 04 23	11.1	22 39.6
<b>11</b>	0 23 54.5	- 4 40 10	11.5	3 04.5	<b>9</b>	23 50 48.1	- 10 08 30	11.1	22 35.0
<b>12</b>	0 23 43.6	- 4 44 30	11.5	3 00.4	<b>10</b>	23 50 10.7	- 10 12 28	11.1	22 30.5
<b>13</b>	0 23 31.6	- 4 48 56	11.5	2 56.3	<b>11</b>	23 49 34.0	- 10 16 17	11.1	22 26.0
<b>14</b>	0 23 18.4	- 4 53 29	11.5	2 52.1	<b>12</b>	23 48 58.0	- 10 19 57	11.1	22 21.5
<b>15</b>	0 23 04.1	- 4 58 09	11.5	2 47.9	<b>13</b>	23 48 22.8	- 10 23 28	11.2	22 17.0
<b>16</b>	0 22 48.6	- 5 02 56	11.4	2 43.8	<b>14</b>	23 47 48.4	- 10 26 50	11.2	22 12.5
<b>17</b>	0 22 32.0	- 5 07 49	11.4	2 39.6	<b>15</b>	23 47 14.9	- 10 30 03	11.2	22 08.0
<b>18</b>	0 22 14.3	- 5 12 48	11.4	2 35.3	<b>16</b>	23 46 42.2	- 10 33 07	11.2	22 03.5
<b>19</b>	0 21 55.5	- 5 17 53	11.4	2 31.1	<b>17</b>	23 46 10.3	- 10 36 01	11.2	21 59.1
<b>20</b>	0 21 35.5	- 5 23 04	11.4	2 26.8	<b>18</b>	23 45 39.4	- 10 38 46	11.2	21 54.7
<b>21</b>	0 21 14.5	- 5 28 21	11.4	2 22.5	<b>19</b>	23 45 09.5	- 10 41 21	11.3	21 50.2
<b>22</b>	0 20 52.3	- 5 33 43	11.3	2 18.2	<b>20</b>	23 44 40.5	- 10 43 47	11.3	21 45.9
<b>23</b>	0 20 29.1	- 5 39 11	11.3	2 13.9	<b>21</b>	23 44 12.5	- 10 46 03	11.3	21 41.5
<b>24</b>	0 20 04.8	- 5 44 44	11.3	2 09.6	<b>22</b>	23 43 45.5	- 10 48 09	11.3	21 37.1
<b>25</b>	0 19 39.5	- 5 50 22	11.3	2 05.2	<b>23</b>	23 43 19.6	- 10 50 05	11.3	21 32.8
<b>26</b>	0 19 13.2	- 5 56 04	11.3	2 00.9	<b>24</b>	23 42 54.7	- 10 51 52	11.3	21 28.4
<b>27</b>	0 18 45.8	- 6 01 52	11.2	1 56.5	<b>25</b>	23 42 30.9	- 10 53 28	11.4	21 24.1
<b>28</b>	0 18 17.4	- 6 07 43	11.2	1 52.1	<b>26</b>	23 42 08.2	- 10 54 55	11.4	21 19.8
<b>29</b>	0 17 48.1	- 6 13 39	11.2	1 47.6	<b>27</b>	23 41 46.6	- 10 56 12	11.4	21 15.6
<b>30</b>	0 17 17.8	- 6 19 38	11.2	1 43.2	<b>28</b>	23 41 26.2	- 10 57 19	11.4	21 11.3
<b>31</b>	0 16 46.6	- 6 25 40	11.2	1 38.8	<b>29</b>	23 41 06.9	- 10 58 16	11.4	21 07.1
<b>Sept. 1</b>	0 16 14.5	- 6 31 46	11.1	1 34.3	<b>30</b>	23 40 48.8	- 10 59 03	11.4	21 02.9
<b>2</b>	0 15 41.5	- 6 37 55	11.1	1 29.8	<b>31</b>	23 40 31.9	- 10 59 40	11.5	20 58.7
<b>3</b>	0 15 07.7	- 6 44 06	11.1	1 25.3	<b>Nov. 1</b>	23 40 16.2	- 11 00 07	11.5	20 54.5
<b>4</b>	0 14 33.1	- 6 50 19	11.1	1 20.8	<b>2</b>	23 40 01.7	- 11 00 24	11.5	20 50.3
<b>5</b>	0 13 57.7	- 6 56 34	11.1	1 16.3	<b>3</b>	23 39 48.5	- 11 00 32	11.5	20 46.2
<b>6</b>	0 13 21.6	- 7 02 50	11.0	1 11.8	<b>4</b>	23 39 36.4	- 11 00 30	11.5	20 42.1
<b>7</b>	0 12 44.7	- 7 09 08	11.0	1 07.2	<b>5</b>	23 39 25.6	- 11 00 18	11.5	20 38.0
<b>8</b>	0 12 07.2	- 7 15 26	11.0	1 02.7	<b>6</b>	23 39 16.0	- 10 59 57	11.6	20 33.9
<b>9</b>	0 11 29.1	- 7 21 46	11.0	0 58.1	<b>7</b>	23 39 07.6	- 10 59 26	11.6	20 29.9
<b>10</b>	0 10 50.3	- 7 28 05	11.0	0 53.5	<b>8</b>	23 39 00.5	- 10 58 46	11.6	20 25.8
<b>11</b>	0 10 11.0	- 7 34 24	10.9	0 49.0	<b>9</b>	23 38 54.7	- 10 57 56	11.6	20 21.8
<b>12</b>	0 09 31.2	- 7 40 43	10.9	0 44.4	<b>10</b>	23 38 50.1	- 10 56 57	11.6	20 17.8
<b>13</b>	0 08 50.8	- 7 47 01	10.9	0 39.8	<b>11</b>	23 38 46.7	- 10 55 50	11.6	20 13.9
<b>14</b>	0 08 10.1	- 7 53 18	10.9	0 35.2	<b>12</b>	23 38 44.6	- 10 54 33	11.6	20 09.9
<b>15</b>	0 07 28.9	- 7 59 33	10.9	0 30.5	<b>Nov. 13</b>	23 38 43.6	- 10 53 07	11.7	20 06.0
<b>16</b>	0 06 47.3	- 8 05 46	10.9	0 25.9	<b>14</b>	23 38 44.0	- 10 51 32	11.7	20 02.1
<b>17</b>	0 06 05.4	- 8 11 58	10.8	0 21.3	<b>15</b>	23 38 45.5	- 10 49 49	11.7	19 58.2
<b>18</b>	0 05 23.2	- 8 18 07	10.8	0 16.7	<b>16</b>	23 38 48.3	- 10 47 57	11.7	19 54.3
<b>19</b>	0 04 40.8	- 8 24 13	10.8	0 12.0	<b>17</b>	23 38 52.3	- 10 45 56	11.7	19 50.5
<b>Sept. 20</b>	0 03 58.2	- 8 30 17	10.8	0 07.4	<b>Nov. 18</b>	23 38 57.5	- 10 43 47	11.7	19 46.6

Second transit for Europa 2008 September 21<sup>d</sup> 23<sup>h</sup> 58<sup>m</sup>1

GEOCENTRIC POSITIONS FOR 0<sup>h</sup> TERRESTRIAL TIME

Date	Astrometric			Vis. Mag.	Ephem- eris Transit	Date	Astrometric			Vis. Mag.	Ephem- eris Transit
	R.A.	Dec.					R.A.	Dec.			
	h m s	° ' "	h m				h m s	° ' "	h m		
<b>2008 Apr. 17</b>	17 58 50.8	-19 04 24	12.1	4 16.7	<b>2008 June 15</b>	17 35 59.0	-18 17 45	10.9	0 01.9		
<b>18</b>	17 59 03.3	-19 03 13	12.1	4 13.0	<b>16</b>	17 35 12.6	-18 17 37	10.9	23 52.5		
<b>19</b>	17 59 14.4	-19 02 02	12.1	4 09.2	<b>17</b>	17 34 26.1	-18 17 32	10.9	23 47.8		
<b>20</b>	17 59 24.1	-19 00 51	12.1	4 05.5	<b>18</b>	17 33 39.8	-18 17 28	10.9	23 43.1		
<b>21</b>	17 59 32.6	-18 59 40	12.0	4 01.7	<b>19</b>	17 32 53.6	-18 17 25	10.9	23 38.4		
<b>22</b>	17 59 39.6	-18 58 30	12.0	3 57.8	<b>20</b>	17 32 07.6	-18 17 25	10.9	23 33.7		
<b>23</b>	17 59 45.3	-18 57 19	12.0	3 54.0	<b>21</b>	17 31 21.8	-18 17 26	11.0	23 29.0		
<b>24</b>	17 59 49.6	-18 56 09	12.0	3 50.1	<b>22</b>	17 30 36.3	-18 17 30	11.0	23 24.4		
<b>25</b>	17 59 52.5	-18 55 00	12.0	3 46.2	<b>23</b>	17 29 51.1	-18 17 35	11.0	23 19.7		
<b>Apr. 26</b>	17 59 54.0	-18 53 51	11.9	3 42.3	<b>24</b>	17 29 06.3	-18 17 42	11.0	23 15.0		
<b>27</b>	17 59 54.2	-18 52 42	11.9	3 38.4	<b>25</b>	17 28 21.9	-18 17 51	11.1	23 10.4		
<b>28</b>	17 59 52.9	-18 51 34	11.9	3 34.5	<b>26</b>	17 27 38.0	-18 18 02	11.1	23 05.7		
<b>29</b>	17 59 50.3	-18 50 26	11.9	3 30.5	<b>27</b>	17 26 54.6	-18 18 14	11.1	23 01.1		
<b>30</b>	17 59 46.3	-18 49 19	11.9	3 26.5	<b>28</b>	17 26 11.8	-18 18 29	11.1	22 56.4		
<b>May 1</b>	17 59 40.8	-18 48 12	11.9	3 22.4	<b>29</b>	17 25 29.6	-18 18 46	11.2	22 51.8		
<b>2</b>	17 59 34.0	-18 47 07	11.8	3 18.4	<b>30</b>	17 24 48.0	-18 19 05	11.2	22 47.2		
<b>3</b>	17 59 25.8	-18 46 02	11.8	3 14.3	<b>July 1</b>	17 24 07.1	-18 19 26	11.2	22 42.6		
<b>4</b>	17 59 16.2	-18 44 58	11.8	3 10.2	<b>2</b>	17 23 26.9	-18 19 49	11.2	22 38.0		
<b>5</b>	17 59 05.2	-18 43 54	11.8	3 06.1	<b>3</b>	17 22 47.5	-18 20 14	11.3	22 33.4		
<b>6</b>	17 58 52.8	-18 42 52	11.8	3 02.0	<b>4</b>	17 22 08.9	-18 20 42	11.3	22 28.9		
<b>7</b>	17 58 39.1	-18 41 50	11.7	2 57.8	<b>5</b>	17 21 31.2	-18 21 11	11.3	22 24.3		
<b>8</b>	17 58 24.0	-18 40 49	11.7	2 53.6	<b>6</b>	17 20 54.4	-18 21 43	11.3	22 19.8		
<b>9</b>	17 58 07.6	-18 39 50	11.7	2 49.4	<b>7</b>	17 20 18.6	-18 22 17	11.4	22 15.3		
<b>10</b>	17 57 49.9	-18 38 51	11.7	2 45.2	<b>8</b>	17 19 43.7	-18 22 53	11.4	22 10.8		
<b>11</b>	17 57 30.9	-18 37 54	11.7	2 41.0	<b>9</b>	17 19 09.8	-18 23 31	11.4	22 06.3		
<b>12</b>	17 57 10.5	-18 36 57	11.6	2 36.7	<b>10</b>	17 18 36.9	-18 24 12	11.4	22 01.9		
<b>13</b>	17 56 48.9	-18 36 02	11.6	2 32.4	<b>11</b>	17 18 05.1	-18 24 54	11.5	21 57.4		
<b>14</b>	17 56 26.1	-18 35 07	11.6	2 28.1	<b>12</b>	17 17 34.4	-18 25 39	11.5	21 53.0		
<b>15</b>	17 56 02.0	-18 34 14	11.6	2 23.7	<b>13</b>	17 17 04.8	-18 26 26	11.5	21 48.6		
<b>16</b>	17 55 36.7	-18 33 22	11.5	2 19.4	<b>14</b>	17 16 36.3	-18 27 16	11.5	21 44.2		
<b>17</b>	17 55 10.2	-18 32 31	11.5	2 15.0	<b>15</b>	17 16 09.0	-18 28 07	11.5	21 39.9		
<b>18</b>	17 54 42.5	-18 31 41	11.5	2 10.6	<b>16</b>	17 15 42.9	-18 29 01	11.6	21 35.5		
<b>19</b>	17 54 13.6	-18 30 53	11.5	2 06.2	<b>17</b>	17 15 17.9	-18 29 57	11.6	21 31.2		
<b>20</b>	17 53 43.7	-18 30 06	11.5	2 01.8	<b>18</b>	17 14 54.2	-18 30 55	11.6	21 26.9		
<b>21</b>	17 53 12.6	-18 29 19	11.4	1 57.3	<b>19</b>	17 14 31.7	-18 31 55	11.6	21 22.6		
<b>22</b>	17 52 40.5	-18 28 35	11.4	1 52.9	<b>20</b>	17 14 10.5	-18 32 58	11.6	21 18.3		
<b>23</b>	17 52 07.3	-18 27 51	11.4	1 48.4	<b>21</b>	17 13 50.5	-18 34 03	11.7	21 14.1		
<b>24</b>	17 51 33.1	-18 27 09	11.4	1 43.9	<b>22</b>	17 13 31.7	-18 35 09	11.7	21 09.9		
<b>25</b>	17 50 57.9	-18 26 28	11.3	1 39.4	<b>23</b>	17 13 14.3	-18 36 18	11.7	21 05.6		
<b>26</b>	17 50 21.7	-18 25 48	11.3	1 34.8	<b>24</b>	17 12 58.1	-18 37 30	11.7	21 01.5		
<b>27</b>	17 49 44.6	-18 25 10	11.3	1 30.3	<b>25</b>	17 12 43.3	-18 38 43	11.8	20 57.3		
<b>28</b>	17 49 06.6	-18 24 33	11.3	1 25.7	<b>26</b>	17 12 29.8	-18 39 58	11.8	20 53.2		
<b>29</b>	17 48 27.8	-18 23 57	11.3	1 21.2	<b>27</b>	17 12 17.6	-18 41 16	11.8	20 49.1		
<b>30</b>	17 47 48.1	-18 23 23	11.2	1 16.6	<b>28</b>	17 12 06.7	-18 42 35	11.8	20 45.0		
<b>31</b>	17 47 07.7	-18 22 51	11.2	1 12.0	<b>29</b>	17 11 57.2	-18 43 57	11.8	20 40.9		
<b>June 1</b>	17 46 26.5	-18 22 19	11.2	1 07.4	<b>30</b>	17 11 49.0	-18 45 21	11.8	20 36.8		
<b>2</b>	17 45 44.6	-18 21 50	11.2	1 02.7	<b>31</b>	17 11 42.2	-18 46 46	11.9	20 32.8		
<b>3</b>	17 45 02.1	-18 21 21	11.1	0 58.1	<b>Aug. 1</b>	17 11 36.8	-18 48 14	11.9	20 28.8		
<b>4</b>	17 44 19.0	-18 20 55	11.1	0 53.4	<b>2</b>	17 11 32.7	-18 49 43	11.9	20 24.8		
<b>5</b>	17 43 35.3	-18 20 29	11.1	0 48.8	<b>3</b>	17 11 30.0	-18 51 15	11.9	20 20.9		
<b>6</b>	17 42 51.1	-18 20 06	11.1	0 44.1	<b>Aug. 4</b>	17 11 28.7	-18 52 48	11.9	20 16.9		
<b>7</b>	17 42 06.5	-18 19 44	11.0	0 39.5	<b>5</b>	17 11 28.7	-18 54 23	12.0	20 13.0		
<b>8</b>	17 41 21.4	-18 19 23	11.0	0 34.8	<b>6</b>	17 11 30.1	-18 55 59	12.0	20 09.1		
<b>9</b>	17 40 36.0	-18 19 04	11.0	0 30.1	<b>7</b>	17 11 32.9	-18 57 37	12.0	20 05.3		
<b>10</b>	17 39 50.3	-18 18 47	11.0	0 25.4	<b>8</b>	17 11 37.0	-18 59 17	12.0	20 01.4		
<b>11</b>	17 39 04.4	-18 18 31	10.9	0 20.7	<b>9</b>	17 11 42.5	-19 00 59	12.0	19 57.6		
<b>12</b>	17 38 18.2	-18 18 17	10.9	0 16.0	<b>10</b>	17 11 49.4	-19 02 42	12.0	19 53.8		
<b>13</b>	17 37 31.9	-18 18 05	10.9	0 11.3	<b>11</b>	17 11 57.6	-19 04 26	12.1	19 50.0		
<b>14</b>	17 36 45.5	-18 17 54	10.9	0 06.6	<b>12</b>	17 12 07.1	-19 06 12	12.1	19 46.3		
<b>June 15</b>	17 35 59.0	-18 17 45	10.9	0 01.9	<b>Aug. 13</b>	17 12 18.0	-19 07 59	12.1	19 42.5		

Second transit for Cybele 2008 June 15<sup>d</sup> 23<sup>h</sup> 57<sup>m</sup>2