

ELEMENTS OF THE 14 SMALL PLANETS, FOR THE PERIODS OF THEIR OPPOSITIONS ABOUT THE YEAR 1851.

	Flora.	Victoria.	Vesta.	Iris.	Metis.	Hebe.	Parthenope.	Astrea.	Egeria.	Irene.	Juno.	Ceres.	Pallas.	Hygeia.
	1852.	1850.	1851.	1851.	1851.	1851.	1851.	1851.	1852.	1851.	1851.	1851.	1851.	1851.
E	Mar. 24	Oct. 0	June 9	Oct. 1	Feb. 8	July 12	Oct. 22.0	April 29.5	Mar. 15.0	July 1.0	June 11.5	Dec. 30.0	Nov. 5.0	Sept. 28.5
L	174° 45'	342° 18'	256° 38'	18° 36'	126° 28'	311° 39'	17° 51'	197° 37'	162° 29'	234° 15'	276° 0'	105° 33'	72° 35'	356° 45'
$\pi$	32° 51'	301° 57'	250° 32'	41° 22'	71° 7'	15° 17'	317° 5'	135° 43'	118° 17'	179° 10'	54° 20'	147° 59'	121° 23'	228° 2'
$\Omega$	110° 21'	235° 28'	103° 22'	259° 44'	68° 29'	138° 31'	124° 59'	141° 28'	43° 18'	86° 51'	170° 55'	80° 49'	172° 45'	287° 38'
i	5° 53'	8° 23'	7° 8'	5° 28'	5° 36'	14° 47'	4° 37'	5° 19'	16° 33'	9° 6'	13° 3'	10° 37'	34° 37'	3° 47'
$\mu$	1086".04	994".51	977".90	963".03	962".58	939".65	926".22	857".50	854".96	853".77	813".88	770".75	768".43	634".24
a	2.2018	2.3349	2.3612	2.3855	2.3862	2.4249	2.4483	2.5774	2.5825	2.5849	2.6687	2.7673	2.7729	3.1514
e	0.15679	0.21792	0.08892	0.23239	0.12229	0.20186	0.09789	0.18875	0.08627	0.16786	0.25586	0.07647	0.23956	0.10092
U	1193d.	1303d.	1325d.	1346d.	1346d.	1379d.	1399d.	1511d.	1516d.	1518d.	1592d.	1681d.	1687d.	2043d.

The letters represent: E, the epoch of mean longitude in mean Berlin time; L, the mean longitude in the orbit;  $\pi$ , the longitude of the perihelion;  $\Omega$ , the longitude of the ascending node; i, the inclination to the ecliptic;  $\mu$ , the mean daily sidereal motion; a, the half major axis; e, the eccentricity; U, the period of sidereal revolution in days. The longitudes refer to the equinox of the epoch.