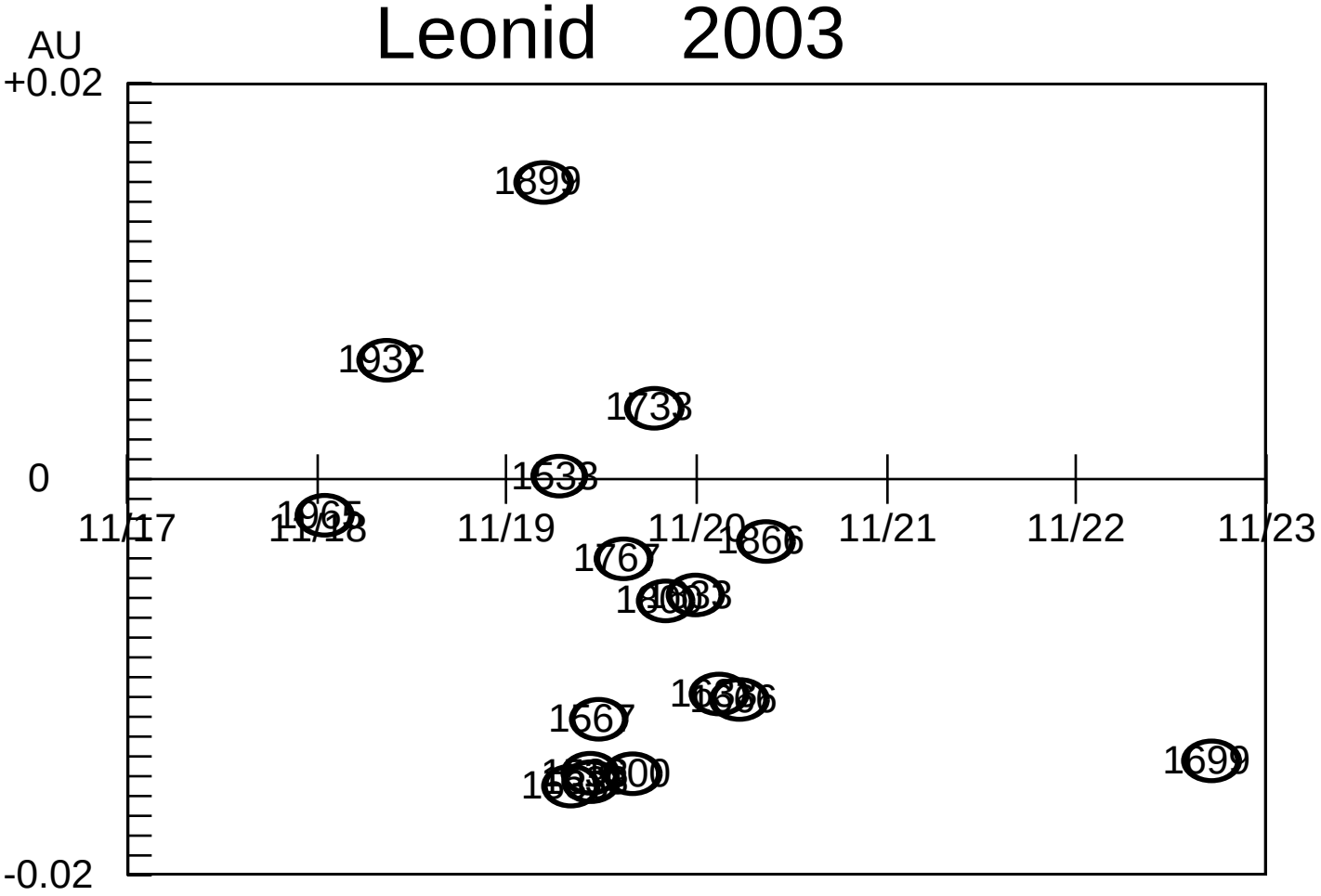
Leonid 2003



perihelion passage (rev.)		ejection velocity (m/s)	close encounter (TT)		Sun longitude (J2000)	distance (AU)	radiant RA (2000)	Dec	relative velocity (km/s)
01	1965	105.2	2003/11/18	01h01m	235.204	-0.001831	153.5	+21.7	70.8
02	1932	59.6	2003/11/18	08h47m	235.530	+0.005996	153.6	+21.6	70.6
03	1899	45.4	2003/11/19	04h41m	236.366	+0.014979	154.3	+21.4	70.4
04	1866	19.1	2003/11/20	08h46m	237.547	-0.003140	155.1	+21.1	70.8
05	1833	13.7	2003/11/19	23h48m	237.170	-0.005852	154.8	+21.3	70.8
06	1800	12.3	2003/11/19	20h02m	237.012	-0.006151	154.7	+21.3	70.8
07	1767	13.8	2003/11/19	14h44m	236.789	-0.004030	154.6	+21.3	70.8
08	1733	17.3	2003/11/19	18h40m	236.954	+0.003573	154.6	+21.2	70.6
09	1699	7.1	2003/11/22	17h01m	239.915	-0.014227	156.7	+20.3	71.0
10	1666	4.9	2003/11/20	05h23m	237.405	-0.011118	154.9	+21.0	71.0
11	1633	4.2	2003/11/20	02h50m	237.298	-0.010860	154.8	+21.0	71.0
12	1600	1.7	2003/11/19	15h54m	236.838	-0.014878	154.5	+21.3	71.0
13	1567	1.1	2003/11/19	11h38m	236.659	-0.012121	154.4	+21.4	71.0
14	1533	27.7	2003/11/19	06h39m	236.449	+0.000159	154.1	+21.9	70.9
14	1533	1.5	2003/11/19	08h05m	236.509	-0.015498	154.3	+21.5	71.0
14	1533	1.3	2003/11/19	10h39m	236.617	-0.015275	154.4	+21.4	71.0
14	1533	1.2	2003/11/19	10h31m	236.612	-0.014852	154.4	+21.4	71.0
15	1499	27.0	2003/11/13	11h09m	230.593	-0.002031	150.5	+23.3	70.5