

u14_eso_104cm_2200nm_predicted_ring_event_times.txt

u14_eso_104cm_2200nm_predicted_ring_event_times.txt produced Mon Apr 12 18:47:36 2021 using
rfrench@Achilles.local:/Volumes/PromisePegasus28TB_backup/dione RAID2/Research/uranus/PDART2014/programs/pro_occinfo2geom_plots_pds4_v7.pro

Bundle ID: uranus_occ_u14_eso_104cm

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Event: u14
Planet: Uranus
Reference: French et al. 1986 Icarus 67, 134-163
Title: Structure of the Uranian rings II. Ring orbits and widths.
Computations from: 1982-04-22T01:32:00.0000Z to 1982-04-22T03:01:59.8200Z
Observatory name: European Southern Observatory
Observatory code file directory: /Volumes/dione RAID2/Research/kernels/
Observatory code file: ObsCodes_pck00010_20200709_Elon+ocobs_v9BJ. obs
Observatory code: ES1
Observatory abbreviation: eso
Entry from observatory code file:
    ES1 G +289 15 41.67 -29 15 31.8          2270 European Southern Observatory, La Silla-DSS 1m          pck00010.tpc
Telescope: 104cm
Instrument: Generic InSb High Speed Photometer
Mean wavelength (nm): 2200nm
Observatory latitude (deg): -29.258833333
Observatory E longitude (deg): 289.261575000
Observatory altitude (km): 2.270000000
Ellipsoid source: /Volumes/dione RAID2/Research/kernels/pck00010.tpc
Observatory reference frame: ITRF93
Earth equatorial radius (km): 6378.136600000
Earth 1/flattening: 298.257006177
Topocentric position vector: 1837.720638718 -5259.010130755 -3100.070533236
Leapsecond kernel file: /Volumes/dione RAID2/Research/kernels/naif0012.tls
Star catalog directory: /Volumes/dione RAID2/Research/RINGFIT/stars/data/
Star catalog file: ustarsALLd.v3.merged.sortedA.csv
Star catalog ID: 79085
Star number: 56
Star name: U14
Star source catalog: Hipparcos
Star RA (deg): 242.149347400
Star Dec (deg): -20.807432480
Star epoch: 1991-04-02T13:30:00.0000Z
Star parallax (mas): -6.000000000
Star pm RA (mas/yr): -1.160000000
Star pm Dec (mas/yr): 0.450000000
Star catalog positions in frame: J2000
Star frame for calculations: J2000
Heliocentric frame for calculations: J2000
Ringfit savefile directory: /Volumes/dione RAID2/Research/RINGFIT/tests/Uranus/Ur017L/savefiles/
Ringfit savefile for star/time offsets: ringfit_v1.8.Ur017L-RF-V0204.sav
Ringfit output file directory: /Volumes/dione RAID2/Research/RINGFIT/tests/Uranus/Ur017L/outfiles/
Ringfit output file: ringfit_v1.8.Ur017L-RF-V0204.out
Star offsets dRA,dDec (mas): 8.814505696 -21.854856960
Time offset for this obstr./event (sec): -0.102041231
Kernel directory: /Volumes/dione RAID2/Research/kernels/
  ../../../../kernels/ura111.bsp
  ../../../../kernels/vgr2_ura111.bsp
  ../../../../kernels/earthstns_itrf93_040916.bsp
  ../../../../kernels/earth_720101_031229.bpc
  ../../../../kernels/pg3f0000r.bsp
  ../../../../kernels/pg490000r.bsp
  ../../../../kernels/naif0012.tls
  /Volumes/dione RAID2/Research/RINGFIT/tests/Uranus/Ur017L/savefiles/../../kernels/RAJobs_U111+rgf9.spk
  /Volumes/dione RAID2/Research/RINGFIT/tests/Uranus/Ur017L/savefiles/../../kernels/URKALLv1.spk
  /Volumes/dione RAID2/Research/kernels/uranus_ringframes_rfrench20201201_v1.tf
  /Volumes/dione RAID2/Research/kernels/pck00010.tpc

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Predicted Ring/Atmosphere Occultation Events

Ring	I/E	----- UTC(Earth) -----	----- UTC(@ring) -----	R(model)	R-dot	Anomaly	Sin B	Ulon	Alt (deg)	Sun (deg)
epsilon	I	1982-04-22T01:33:27.63Z	1982-04-21T23:03:37.42Z	51466.46	-17.502	141.648	-0.96376	23.038	18.802	-43.113
lambda	I	1982-04-22T01:34:50.06Z	1982-04-21T23:04:59.85Z	50026.01	-17.446	31.670	-0.96376	23.593	19.094	-43.407
delta	I	1982-04-22T01:36:29.18Z	1982-04-21T23:06:38.98Z	48300.25	-17.372	313.138	-0.96376	24.305	19.446	-43.760
gamma	I	1982-04-22T01:37:07.75Z	1982-04-21T23:07:17.55Z	47630.75	-17.342	216.824	-0.96376	24.596	19.582	-43.897
eta	I	1982-04-22T01:37:33.98Z	1982-04-21T23:07:43.78Z	47176.23	-17.319	270.951	-0.96377	24.798	19.675	-43.990
beta	I	1982-04-22T01:39:02.66Z	1982-04-21T23:09:12.46Z	45644.38	-17.241	326.825	-0.96375	25.512	19.990	-44.306
alpha	I	1982-04-22T01:39:56.97Z	1982-04-21T23:10:06.78Z	44706.69	-17.187	290.611	-0.96380	25.978	20.183	-44.499
four	I	1982-04-22T01:42:01.72Z	1982-04-21T23:12:11.54Z	42568.61	-17.050	86.663	-0.96388	27.119	20.626	-44.941
five	I	1982-04-22T01:42:20.98Z	1982-04-21T23:12:30.80Z	42239.60	-17.029	266.673	-0.96372	27.307	20.694	-45.010
six	I	1982-04-22T01:42:46.80Z	1982-04-21T23:12:56.62Z	41799.00	-16.995	25.776	-0.96404	27.563	20.786	-45.101
six	E	1982-04-22T02:51:55.46Z	1982-04-22T00:22:05.56Z	41877.17	17.121	159.503	-0.96404	161.419	35.704	-59.251
five	E	1982-04-22T02:52:12.06Z	1982-04-22T00:22:22.16Z	42174.28	17.145	40.819	-0.96373	161.582	35.764	-59.305
four	E	1982-04-22T02:52:37.53Z	1982-04-22T00:22:47.64Z	42605.35	17.177	221.244	-0.96388	161.831	35.856	-59.386
alpha	E	1982-04-22T02:54:39.07Z	1982-04-22T00:24:49.18Z	44705.63	17.318	67.463	-0.96380	162.947	36.297	-59.774
beta	E	1982-04-22T02:55:34.30Z	1982-04-22T00:25:44.42Z	45666.33	17.378	104.627	-0.96375	163.420	36.498	-59.949
eta	E	1982-04-22T02:57:01.02Z	1982-04-22T00:27:11.15Z	47176.13	17.461	50.176	-0.96377	164.125	36.813	-60.223
gamma	E	1982-04-22T02:57:26.49Z	1982-04-22T00:27:36.62Z	47621.17	17.484	356.454	-0.96376	164.323	36.905	-60.304
delta	E	1982-04-22T02:58:05.29Z	1982-04-22T00:28:15.42Z	48300.46	17.518	93.349	-0.96376	164.618	37.046	-60.426
lambda	E	1982-04-22T02:59:43.57Z	1982-04-22T00:29:53.71Z	50026.01	17.598	173.317	-0.96376	165.330	37.403	-60.734
epsilon	E	1982-04-22T03:00:41.49Z	1982-04-22T00:30:51.63Z	51046.56	17.642	284.252	-0.96376	165.727	37.614	-60.915

Event geometry at 1982-04-22T02:17:50.0000Z

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Ring opening angle B (deg): -74.52839
Position angle of pole P (deg): 71.13346
Observer-planet distance (km): 2695.073759 x 10^6
Light travel time (sec): 8989.798397

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