

u14_teide_155cm_880nm_predicted_ring_event_times.txt produced Sun Apr 4 22:14:06 2021 using
rfrench@Achilles.fios-router.home:/Volumes/PromisePegasus28TB_backup/dione RAID2/Research/uranus/PDART2014/programs/pro_occinfo2geom_plots_pds4_v7.pro

Bundle ID: uranus_occ_u14_teide_155cm

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Event: u14
Planet: Uranus
Reference: Millis, R. et al. 1987 Icarus 69, 176-184
Title: Observations of the 22 April 1982 Stellar Occultation by Uranus and the Rings.
Computations from: 1982-04-22T01:16:09.4100Z to 1982-04-22T03:15:00.1000Z
Observatory name: Observatorio del Teide
Observatory code file directory: /Volumes/dione RAID2/Research/kernels/
Observatory code file: ObsCodes_pck00010_20200709_Elon+ocobs_v9BJ.obs
Observatory code: TEN
Observatory abbreviation: teide
Entry from observatory code file:
  TEN G -016 29 45.00 +28 17 32.0          2380 Tenerife Cabezon Observatory 1.55m Carlos Sanches pck00010.tpc
Telescope: 155cm
Instrument: Generic Visual High Speed Photometer
Mean wavelength (nm): 880nm
Observatory latitude (deg): 28.292222222
Observatory E longitude (deg): -16.495833333
Observatory altitude (km): 2.380000000
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: 5391.117218988 -1596.495229570 3006.188127254
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): -0.051091549
Kernel directory: /Volumes/dione RAID2/Research/kernels/
  ../../../../kernels/urall1.bsp
  ../../../../kernels/vgr2.urall1.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_U11+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	1982-04-22T01:34:30.16Z	1982-04-21T23:04:40.01Z	51503.29	-16.621	150.896	-0.96376	32.289 35.339	-49.033
lambda	I	1982-04-22T01:35:59.40Z	1982-04-21T23:06:09.25Z	50026.01	-16.483	41.266	-0.96376	33.183 35.497	-48.967
delta	I	1982-04-22T01:37:44.65Z	1982-04-21T23:07:54.51Z	48300.22	-16.304	323.148	-0.96376	34.307 35.681	-48.886
gamma	I	1982-04-22T01:38:25.84Z	1982-04-21T23:08:35.70Z	47630.12	-16.231	226.997	-0.96376	34.769 35.752	-48.853
eta	I	1982-04-22T01:38:53.85Z	1982-04-21T23:09:03.72Z	47176.20	-16.177	281.242	-0.96377	35.090 35.800	-48.831
beta	I	1982-04-22T01:40:29.23Z	1982-04-21T23:10:39.10Z	45642.63	-15.985	337.547	-0.96375	36.232 35.963	-48.751
alpha	I	1982-04-22T01:41:28.25Z	1982-04-21T23:11:38.12Z	44700.85	-15.855	301.614	-0.96380	36.984 36.062	-48.700
four	I	1982-04-22T01:43:43.42Z	1982-04-21T23:13:53.30Z	42577.84	-15.525	98.360	-0.96388	38.820 36.287	-48.579
five	I	1982-04-22T01:44:06.21Z	1982-04-21T23:14:16.10Z	42223.06	-15.464	278.523	-0.96372	39.151 36.324	-48.558
six	I	1982-04-22T01:44:33.43Z	1982-04-21T23:14:43.32Z	41803.66	-15.389	37.763	-0.96404	39.548 36.369	-48.532
Atmosphere	E	1982-04-22T02:05:29.24Z						38.209 38.209	-47.066
Atmosphere	E	1982-04-22T02:25:41.70Z						39.567 39.567	-45.148
six	E	1982-04-22T02:45:20.18Z	1982-04-22T00:15:30.32Z	41873.33	15.442	147.878	-0.96404	149.770 40.456	-42.874
five	E	1982-04-22T02:45:38.12Z	1982-04-22T00:15:48.26Z	42165.04	15.494	29.288	-0.96373	150.035 40.466	-42.837
four	E	1982-04-22T02:46:07.29Z	1982-04-22T00:16:17.43Z	42610.58	15.572	209.889	-0.96388	150.454 40.482	-42.776
alpha	E	1982-04-22T02:48:19.83Z	1982-04-22T00:18:29.98Z	44700.54	15.900	56.797	-0.96380	152.256 40.552	-42.495
beta	E	1982-04-22T02:49:20.02Z	1982-04-22T00:19:30.17Z	45662.73	16.034	94.239	-0.96375	153.019 40.583	-42.367
eta	E	1982-04-22T02:50:53.88Z	1982-04-22T00:21:04.04Z	47176.11	16.226	40.215	-0.96377	154.147 40.627	-42.164
gamma	E	1982-04-22T02:51:21.27Z	1982-04-22T00:21:31.43Z	47621.30	16.278	346.611	-0.96376	154.462 40.640	-42.105
delta	E	1982-04-22T02:52:02.89Z	1982-04-22T00:22:13.05Z	48300.41	16.355	83.676	-0.96376	154.931 40.658	-42.014
lambda	E	1982-04-22T02:53:47.82Z	1982-04-22T00:23:57.99Z	50026.01	16.537	164.061	-0.96376	156.055 40.702	-41.783
epsilon	E	1982-04-22T02:54:53.12Z	1982-04-22T00:25:03.30Z	51109.19	16.638	275.245	-0.96376	156.716 40.728	-41.638

Event geometry at 1982-04-22T02:15:35.0000Z

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Ring opening angle B (deg): -74.52839
Position angle of pole P (deg): 71.13346
Observer-planet distance (km): 2695.061248 x 10^6
Light travel time (sec): 8989.756668

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