

u16_palomar_508cm_2200nm_predicted_ring_event_times.txt produced Sun Apr 4 22:54:27 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_u16_palomar_508cm

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Event: u16
Planet: Uranus
Reference: French et al. 1986 Icarus 67, 134-163
Title: Structure of the Uranian rings II. Ring orbits and widths.
Computations from: 1982-06-04T04:04:42.6470Z to 1982-06-04T09:24:33.5517Z
Observatory name: Palomar Observatory
Observatory code file directory: /Volumes/dione_raid2/Research/kernels/
Observatory code file: ObsCodes_pck00010_20200709_Elon+ocobs_v9BJ.obs
Observatory code: 675
Observatory abbreviation: palomar
Entry from observatory code file:
  675 G +243 08 14.86 +33 21 14.8      1696 Palomar Mountain      pck00010.tpc
Telescope: 508cm
Instrument: Generic InSb High Speed Photometer
Mean wavelength (nm): 2200nm
Observatory latitude (deg): 33.354111111
Observatory E longitude (deg): 243.137461111
Observatory altitude (km): 1.696000000
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: -2410.356622789 -4758.781262269 3487.762207224
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: 23892052
Star number: 71
Star name: U16
Star source catalog: UCAC2
Star RA (deg): 240.366784200
Star Dec (deg): -20.488545300
Star epoch: 2000-01-01T00:00:00.0000Z
Star parallax (mas): 0.000000000
Star pm RA (mas/yr): 1.400000000
Star pm Dec (mas/yr): 2.900000000
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): 1.582246358 97.245908806
Time offset for this obstr./event (sec): 0.000000000
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_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	1982-06-04T05:16:06.97Z	1982-06-04T02:47:22.16Z	51144.95	-20.801	89.859	-0.95645	30.045	30.915	-23.844
lambda	I	1982-06-04T05:17:00.88Z	1982-06-04T02:48:16.07Z	50026.01	-20.694	335.180	-0.95645	30.659	31.003	-23.959
delta	I	1982-06-04T05:18:24.58Z	1982-06-04T02:49:39.78Z	48300.56	-20.519	246.679	-0.95645	31.669	31.140	-24.137
gamma	I	1982-06-04T05:18:57.28Z	1982-06-04T02:50:12.47Z	47631.04	-20.438	148.674	-0.95645	32.083	31.192	-24.205
eta	I	1982-06-04T05:19:19.55Z	1982-06-04T02:50:34.74Z	47176.38	-20.382	200.418	-0.95645	32.372	31.228	-24.252
beta	I	1982-06-04T05:20:33.81Z	1982-06-04T02:51:49.01Z	45669.10	-20.194	247.067	-0.95643	33.377	31.347	-24.408
alpha	I	1982-06-04T05:21:19.47Z	1982-06-04T02:52:34.67Z	44749.61	-20.064	204.378	-0.95651	34.028	31.419	-24.503
four	I	1982-06-04T05:23:11.24Z	1982-06-04T02:54:26.44Z	42527.93	-19.719	343.185	-0.95649	35.735	31.594	-24.735
five	I	1982-06-04T05:23:22.05Z	1982-06-04T02:54:37.25Z	42310.50	-19.675	160.034	-0.95672	35.919	31.611	-24.757
six	I	1982-06-04T05:23:46.79Z	1982-06-04T02:55:01.99Z	41833.33	-19.604	275.342	-0.95636	36.308	31.649	-24.808
Atmosphere	I	1982-06-04T05:39:12.77Z							32.974	-26.629
Atmosphere	E	1982-06-04T06:00:50.34Z							34.479	-28.912
six	E	1982-06-04T06:15:04.38Z	1982-06-04T03:46:19.58Z	41801.10	19.631	31.710	-0.95636	152.754	35.222	-30.216
five	E	1982-06-04T06:15:26.68Z	1982-06-04T03:46:41.88Z	42225.02	19.701	277.144	-0.95672	153.120	35.239	-30.248
four	E	1982-06-04T06:15:44.17Z	1982-06-04T03:46:59.37Z	42579.69	19.759	100.743	-0.95649	153.406	35.252	-30.273
alpha	E	1982-06-04T06:17:30.15Z	1982-06-04T03:48:45.35Z	44690.75	20.093	325.295	-0.95651	155.031	35.329	-30.423
beta	E	1982-06-04T06:18:17.11Z	1982-06-04T03:49:32.31Z	45641.37	20.224	9.304	-0.95643	155.703	35.362	-30.488
eta	E	1982-06-04T06:19:32.68Z	1982-06-04T03:50:47.89Z	47176.10	20.423	324.689	-0.95645	156.728	35.414	-30.592
gamma	E	1982-06-04T06:19:54.70Z	1982-06-04T03:51:09.90Z	47626.16	20.479	273.544	-0.95645	157.014	35.429	-30.622
delta	E	1982-06-04T06:20:27.56Z	1982-06-04T03:51:42.76Z	48300.17	20.551	12.377	-0.95645	157.431	35.451	-30.667
lambda	E	1982-06-04T06:21:51.17Z	1982-06-04T03:53:06.37Z	50026.01	20.736	102.878	-0.95645	158.441	35.505	-30.780
epsilon	E	1982-06-04T06:23:00.29Z	1982-06-04T03:54:15.50Z	51463.88	20.873	218.957	-0.95645	159.225	35.549	-30.872

Event geometry at 1982-06-04T05:50:00.0000Z

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Ring opening angle B (deg): -73.02851
Position angle of pole P (deg): 74.50336
Observer-planet distance (km): 2675.665241 x 10^6
Light travel time (sec): 8925.058553

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