

# Important NEO, Trojan, & KBO Events of the Coming Year

(2025 only)

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IOTA 2024 Annual Meeting

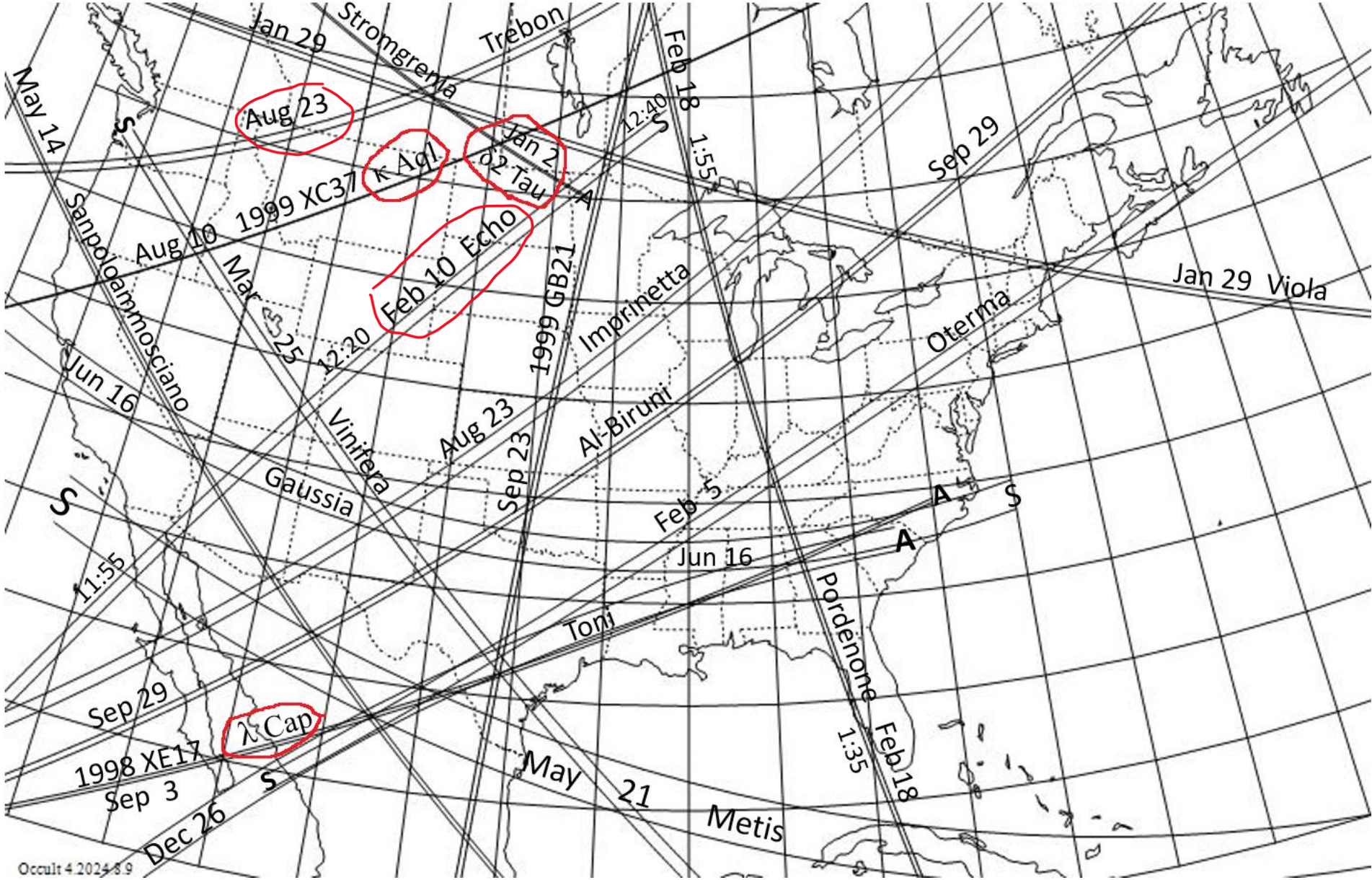
2024 September 28

The original version of this also had several slides of late 2024 events,  
removed from this version; the better events are circled in red

# Outline — X items removed from this version

- X - IOTA's Campaign of Sept. 14 for (4337) Arecibo, a brief account
- X - Important NEA occultations during the rest of 2024 (mainly Phaethon)
- X - Late 2024 (617) Patroclus/Menoetius & other Trojan Occultations
- X - Late 2024 Occultations by Distant Objects (Neptune, Centaurs, TNO's)
- 2025 Bright Occultations for the RASC Observer's Handbook
- 2025 NEA Occultations
- 2025 Special Main Belt Asteroidal Occultations
- 2025 Trojan Occultations
- 2025 Distant Object Occultations, esp. Jan. 30<sup>th</sup> 2013 LU28 Occultation
- 2025 Lunar Grazing Occultations
- RASC Observer's Handbook and IOTA special events Web Sites

# 2025 Bright Occultations for the RASC Observer's Handbook



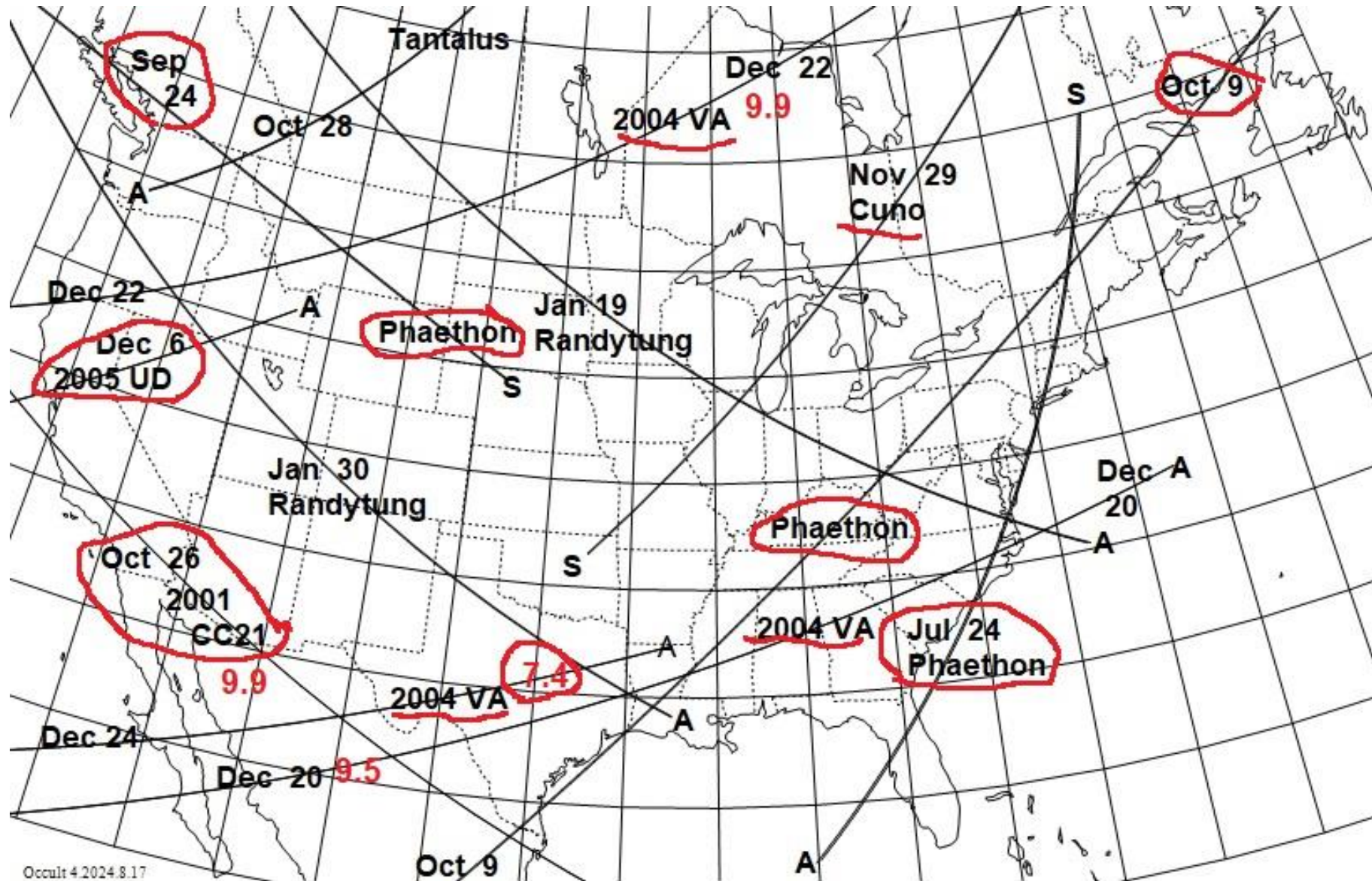


## 2025 OCCULTATIONS OF BRIGHT STARS BY MAIN-BELT ASTEROIDS

Date	UT	Occulting Body	Star	RA (2000)			Dec	$\Delta$ Mag.	Dur.	Path	
				Mag.	h	m	s		°		'
Jan. 2	10:48	1422 Stromgrenia	<u><math>\delta^2</math> Tauri</u>	4.8	04	24	06.0	17 26 38	11.5	1.7	MN-AB
Jan. 29	04:46	1076 Viola	SAO 98560	7.8	09	25	21.7	14 11 27	6.9	2.7	ME-BC
Feb. 5	01:33	1529 Oterma	SAO 93614	7.6	03	48	53.0	15 35 09	8.3	5.2	Mex-NL
Feb. 10	12:20	<u>60 Echo</u>	<u>SAO 139036</u>	9.0	12	54	46.5	-07 36 58	3.1	<u>56.2</u>	Baja-ON
Feb. 18	01:45	3896 Pordenone	SAO 95233	9.0	06	06	28.8	13 14 32	7.7	9.6	CU-MB
Mar. 25	03:15	759 Vinifera	SAO 58295	8.8	05	39	30.2	34 36 10	7.6	2.4	WA-TX
May 14	08:25	16847 Sanpoloamosciano	SAO 186852	6.7	18	28	10.2	-21 14 19	11.2	2.3	Mex-OR
May 21	03:29	9 Metis	ZC 2130	7.5	14	55	53.2	-13 54 03	2.6	14.7	CU-Baja
Jun. 16	08:57	1001 Gaussia	PPM 235123	8.7	18	51	14.5	-18 49 03	5.9	5.8	NC-CA
Aug. 10	08:24	45072 1999 XC37	<u><math>\kappa</math> Aquilae</u>	4.9	19	36	53.5	-07 01 39	12.6	0.5	ON-CA
Aug. 23	08:09	3735 Trebon	<u>ZC 3019</u>	5.5	20	40	32.4	-16 07 25	11.3	1.9	MB-OR
Aug. 25	06:32	1165 Imprinetta	SAO 127256	6.5	22	03	24.8	05 26 26	7.7	5.3	ON-Baja
Sep. 3	09:03	25303 1998 XE17	<u><math>\lambda</math> Capricorni</u>	5.6	21	46	32.1	-11 21 58	12.4	1.3	NC-Baja
Sep. 23	11:00	49630 1999 GB21	SAO 76555	6.8	04	20	04.3	23 35 55	11.7	3.0	Mex-MB
Sep. 29	08:03	9936 Al-Biruni	SAO 59535	8.8	06	50	28.2	34 52 28	9.5	1.6	Baja-NL
Dec. 26	07:11	924 Toni	SAO 110589	4.9	02	31	30.1	02 16 02	8.9	17.0	Mex-SC



# 2025 NEA Occultations for the RASC Handbook

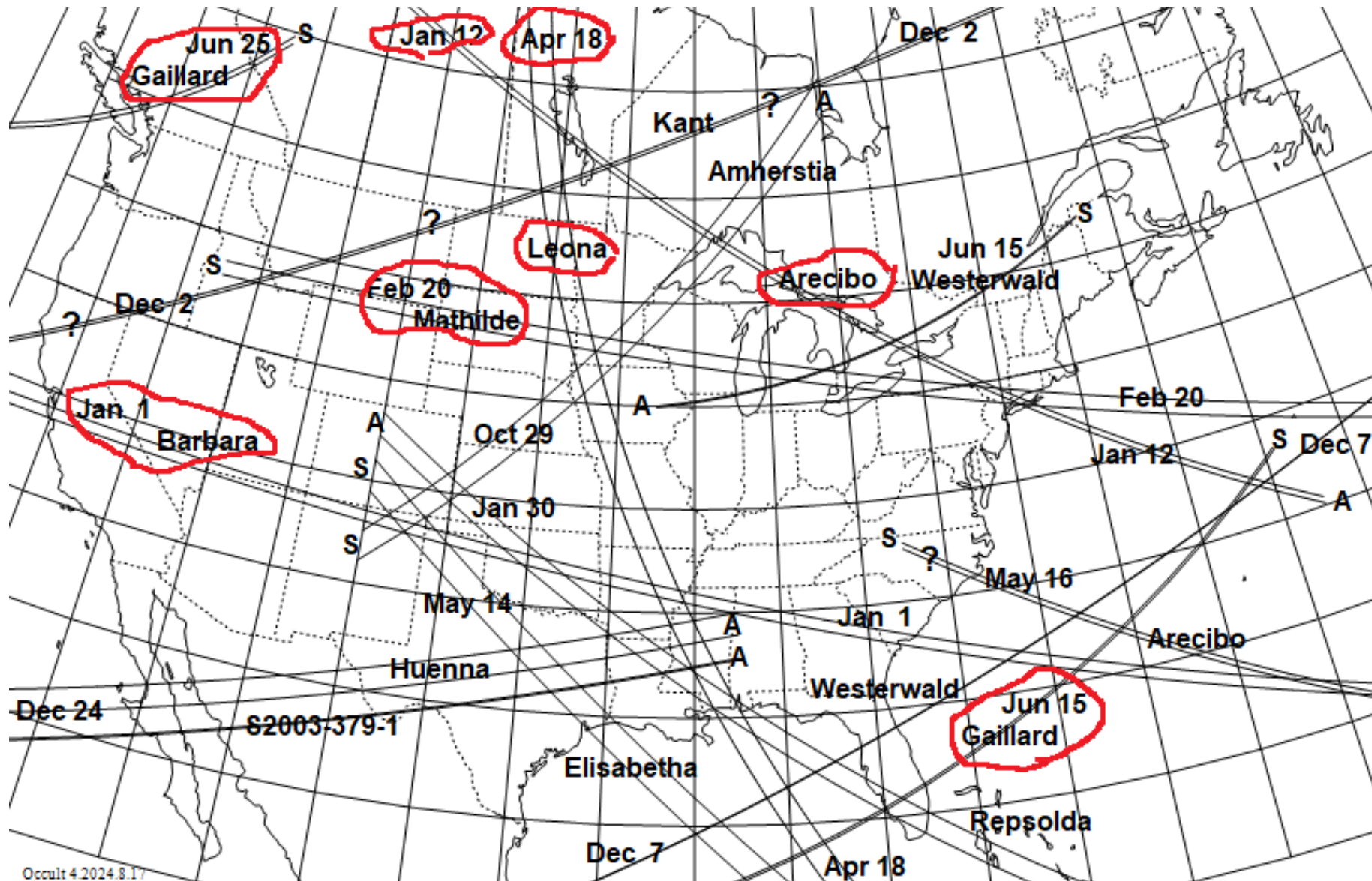




## 2025 OCCULTATIONS BY NEAR-EARTH ASTEROIDS

Date	UT	Occulting Body	Star	Mag.	RA (2000)			Dec			Dur.		Path	
					h	m	s	°	'	"	ΔMag.	s		
Jan. 19	10:22	29886	Randytung	TYC 1351-00110-1	12.0	07	22	54.8	18	07	45	5.6	0.38	VA-AB
Jan. 30	10:40	29886	Randytung	UCAC4 544-039448	12.5	07	13	22.8	18	46	33	5.4	0.47	LA-OR
Jul. 24	07:07	3200	Phaethon	TYC 2364-01273-1	12.0	03	51	00.5	35	29	26	6.7	0.30	FL-QC
Sep. 24	11:38	3200	Phaethon	TYC 2885-00459-1	11.4	04	02	48.4	42	25	26	7.0	0.44	NE-BC
Oct. 9	03:05	3200	Phaethon	UCAC4 667-019258	12.4	03	39	27.6	43	15	01	5.6	0.29	NL-Mex
Oct. 26	05:53	98943	2001 CC21	PPM 210725	9.9	01	50	59.9	-11	38	23	6.5	0.12	Mex-CA
Oct. 28	10:25	2102	Tantalus	TYC 1428-00772-1	10.9	10	48	38.4	16	17	26	7.3	0.04	WA-SK
Nov. 29	00:15	4183	Cuno	TYC 1761-00566-1	12.0	02	03	22.8	26	32	07	3.4	0.30	QC-OK
Dec. 6	03:31	155140	2005 UD	UCAC4 357-197222	12.4	21	26	46.0	-18	39	40	7.4	0.02	CA-ID
Dec. 20	04:50	220839	2004 VA	SAO 129288	9.5	01	25	15.3	-06	48	30	5.8	0.14	NC-Baja
Dec. 22	03:55	220839	2004 VA	PPM 182998	9.9	01	04	02.6	-08	38	14	5.4	0.13	ON-CA
Dec. 24	05:31	220839	2004 VA	SAO 147377	7.4	00	38	33.2	-10	41	24	8.0	0.13	LA-Baja

# 2025 Special Main Belt Occultations for the RASC Handbook



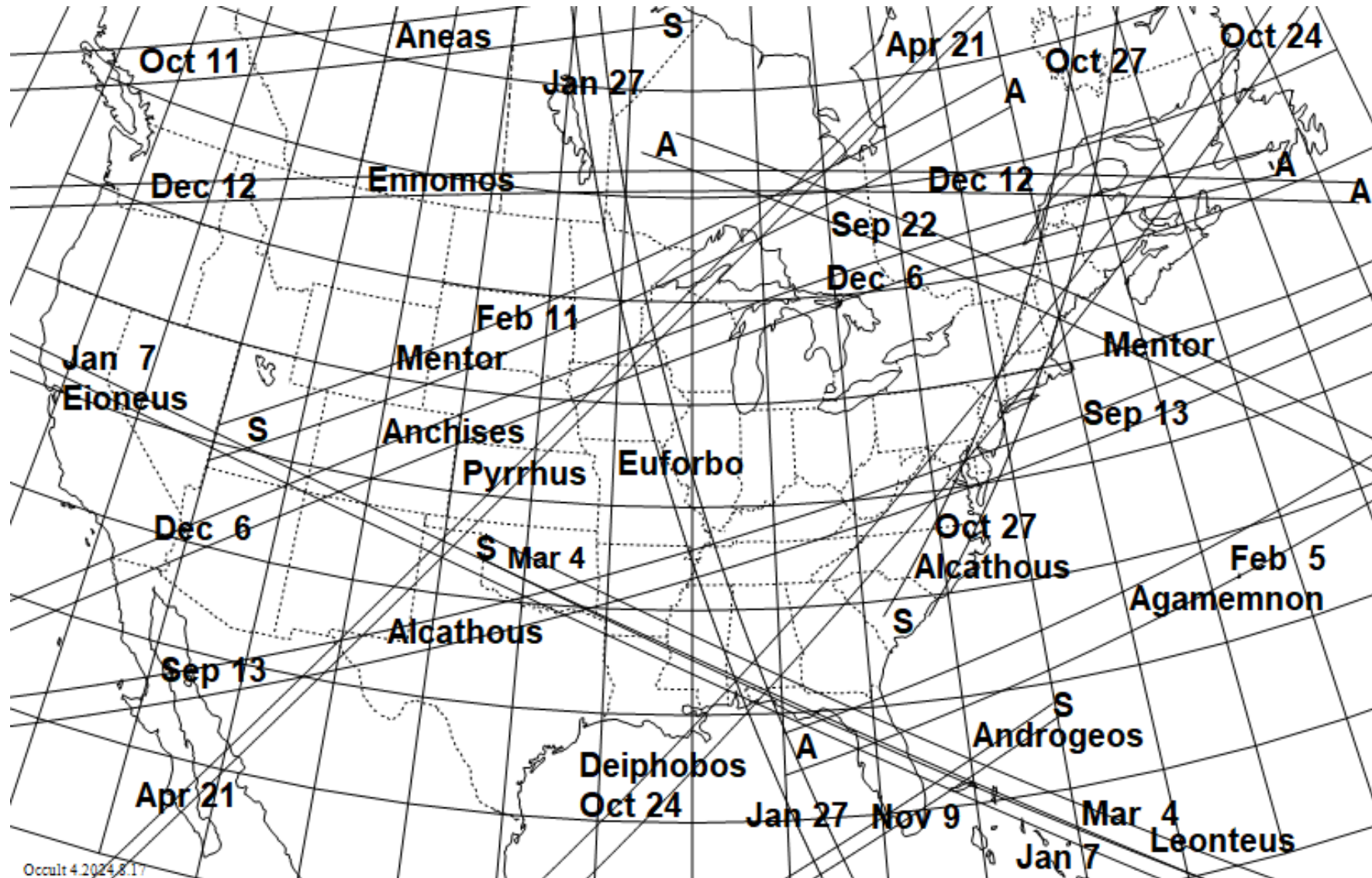


# 2025 Special Main Belt Occultations for the RASC Handbook

Date	UT	Occulting Body	Star	Mag.	RA (2000)			Dec			Dur.	Path	
					h	m	s	°	'	"			ΔMag.
Jan. 01	04:57	234 Barbara	TYC 0796-00572-1	10.6	08	28	59.2	08	23	40	2.7	3.7	SC-CA
Jan. 12	09:50	4337 Arecibo	UCAC4 578-036587	12.1	07	00	22.6	25	30	20	5.3	1.4	NY-SK
Jan. 30	10:57	906 Repsolda	SAO 184211	8.2	16	11	52.6	-22	32	43	7.1	2.3	CO-FL
Feb. 20	02:07	253 Mathilde	PPM 156225	9.5	09	49	27.9	07	51	43	5.4	3.6	NY-ID
Apr. 18	05:33	319 Leona	UCAC4 473-046221	9.1	10	50	55.2	04	29	58	7.1	9.4	MS-MB
May 14	02:57	412 Elisabetha	TYC 1964-00239-1	9.9	09	53	08.6	26	10	44	4.5	5.7	CO-TX
May 16	01:20	4337 Arecibo	UCAC4 569-040040	11.3	07	31	11.5	23	43	06	7.5	0.6	NC
Jun. 15	07:07	10253 Westerwald	PPM 207368	10.3	23	16	55.5	-05	06	02	10.0	0.2	IA-NB
Jun. 15	07:35	10424 Gaillard	UCAC4 341-199151	11.9	20	38	39.8	21	55	39	6.7	1.9	FL
Jun. 25	09:36	10424 Gaillard	TYC 6342-00379-1	10.4	20	33	49.5	-22	18	58	8.1	1.0	AB-BC
Oct. 29	01:01	516 Amherstia	PPM 270836	10.4	20	12	35.1	-21	14	53	2.9	3.0	NM-ON
Dec. 02	06:40	7083 Kant	SAO 93645	8.0	03	52	36.5	19	36	29	7.8	1.6	QC-CA
Dec. 07	01:50	10253 Westerwald	PPM 206928	9.4	22	55	11.0	-07	13	06	10.7	0.1	FL
Dec. 24	04:07	379 S2003-379-1	SAO 146655	8.7	23	21	05.1	-04	46	17	5.5	0.2	Baja-AL
Dec. 24	04:09	379 Huenna	SAO 146655	8.7	23	21	05.1	-04	46	17	5.5	3.5	Baja-MS



# 2025 Trojan Occultations for the RASC Handbook

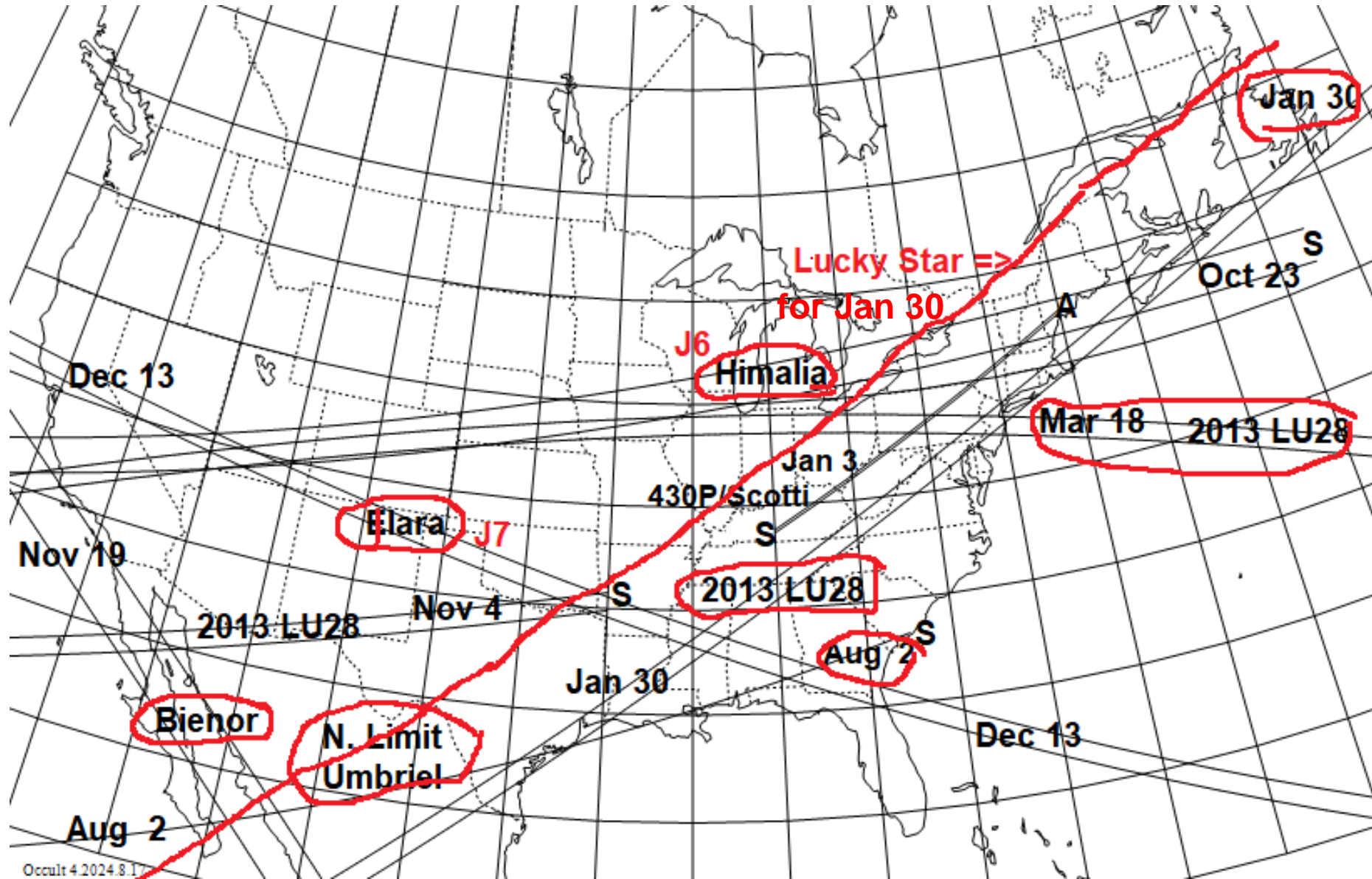


## 2025 OCCULTATIONS BY TROJAN ASTEROIDS

Date	UT	Occulting Body	Star	Mag.	RA (2000)			Dec		Dur. s	Path		
					h	m	s	°	'			"	ΔMag.
Jan. 07	05:54	15440 Eioneus	UCAC4 554-043473	14.6	08	45	24.4	20	37	58	2.5	3.6	FL-CA
Jan. 27	10:54	4063 Euforbo	UCAC4 554-047489	13.4	11	28	55.2	20	46	21	2.7	7.3	FL-MB
<u>Feb. 05</u>	<u>01:14</u>	<u>911 Agamemnon</u>	UCAC4 531-050264	13.1	10	16	59.0	16	02	31	2.0	8.9	<u>FL</u>
Feb. 11	02:15	3451 Mentor	UCAC4 433-003184	14.3	02	32	53.7	-03	30	43	2.1	5.7	UT-QC
Mar. 4	01:34	3793 Leonteus	UCAC4 412-049512	13.4	10	08	07.3	-07	43	13	2.5	5.6	FL-OK
Apr. 21	03:54	5283 Pyrrhus	UCAC4 600-048718	13.0	10	36	13.0	29	57	26	4.2	6.8	QC-Baja
Sep.,13	06:03	241 Alcahous	UCAC4 590-003462	13.0	01	24	22.3	27	57	51	3.2	10.0	NJ-Baja
Sep 22	06:27	3451 Mentor	UCAC4 445-008590	13.1	05	08	36.6	-01	07	55	3.0	8.8	ON-ME
Oct 11	11:02	1172 Aneas	UCAC4 574-009865	12.8	04	05	03.1	24	36	47	3.2	14.4	MB-BC
<u>Oct 24</u>	<u>02:40</u>	<u>1867 Deiphobus</u>	UCAC4 674-017406	<u>11.5</u>	03	12	40.9	44	41	30	4.4	8.3	<u>NL-Mex</u>
Oct 27	23:27	2241 Alcahous	UCAC4 581-002306	12.9	01	03	04.1	26	03	49	3.1	6.6	NL-SC
Nov 9	10:20	5027 Androgeos	UCAC4 611-047897	13.4	11	54	39.0	32	06	02	4.4	2.0	FL
Dec 6	06:01	1173 Anchises	UCAC4 529-002131	14.6	01	10	41.2	15	46	32	1.6	19.2	NL-Baja
Dec 12	08:02	4709 Ennomos	UCAC4 583-007696	13.7	03	18	27.9	26	32	41	2.2	5.1	NS-OR



# 2025 Distant Occultations for the RASC Handbook



## 2025 OCCULTATIONS BY DISTANT OBJECTS

Date	UT	Occulting Body	Star	Mag.	RA (2000)			Dec			Dur. s	Path	
					h	m	s	°	'	"			ΔMag.
Jan 3	23:47	430P/Scotti	UCAC4 374-177973	15.6	22	11	31.6	-15	16	15	0.0	0.3	KY-ME
Jan 30	01:53	468861 2013 LU28	TYC 2449-01891-1	12.0	06	57	35.7	36	31	56	6.2	2.0	NL-Mex
Mar 11	09:45	95626 2002 GZ32	UCAC4 339-187679	15.3	19	43	10.8	-22	20	37	4.9	9.6	FL?
Mar 18	04:58	468861 2013 LU28	UCAC4 620-035308	14.0	06	33	20.2	33	51	15	4.5	3.6	NJ-CA
Aug 2	09:47	Umbriel (U-II)	UCAC4 551-007948	13.2	03	53	58.3	20	03	58	1.8	59.2	Mex-FL
Oct 23	08:49	Himalia (J-VI)	UCAC4 555-041426	13.7	07	42	54.2	20	55	29	1.7	21.7	CA-NS
Nov 4	11:38	468861 2013 LU28	UCAC4 570-034881	14.2	06	52	55.7	23	52	48	4.3	3.0	AR-Baja
Nov 19	11:09	54598 Bienor	UCAC4 626-043396	15.0	08	18	19.5	35	03	24	4.1	25.3	Mex-CA
Dec 13	08:22	Elara (J-VII)	UCAC4 559-042014	13.7	07	36	59.2	21	38	10	3.2	6.9	FL-CA

**Lucky Star usually has better predictions for these events  
at <https://lesia.obspm.fr/lucky-star/predictions.php>**



# 2025 Jan. 30 – 2013 LU28 Lucky Star Path, North America



# 2025 Jan. 30 – 2013 LU28 Lucky Star Path, Europe



From interactive map  
at bottom of  
<https://lesia.obspm.fr/lucky-star/occ.php?p=142891>





# 2025 Lunar Grazing Occultations for the RASC Handbook

Date	Object Name	ZC/SAO	d	$m_V$	%sl	L	W.U.T.	Lo.	La.
Jan. 10	Alcyone	ZC 552	K	2.9	82+	S	00:55.5	-90	20
Jan. 10	Atlas	ZC 560	U	3.6	82+	S	01:06.0	-114	20
Jan. 14	Mars			-1.4	100-	S	02:14.8	-98	20
Jan. 14	Mars			-1.4	100-	N	02:28.9	-130	45
Jan. 24	$\pi$ Scorpii	ZC 2287	W	2.9	27-	S	09:45.8	-84	47
Feb. 6	Alcyone	ZC 552	K	2.9	61+	S	08:52.6	-130	36
Feb. 6	Taygeta	ZC 539	X	4.3	60+	N	07:51.8	-130	43
Feb. 6	Maia	ZC 541	X	3.9	61+	N	07:57.1	-130	52
Feb. 21	$\tau$ Scorpii	ZC 2383		2.8	43-	S	11:33.8	-104	55
Mar. 7	El Nath	ZC 810	K	1.6	55+	N	04:27.9	-130	37
Mar. 14		SAO 118953		9.1	100E	S	06:51.9	-130	54
Apr. 30	El Nath	ZC 810	K	1.6	13+	N	18:37.9	-101	20
Jul. 13	Nashira	ZC 3171	V	3.7	93-	N	10:30.3	-112	20
Jul. 20	Taygeta	ZC 539	X	4.3	24-	N	08:54.7	-110	20
Jul. 20	Electra	ZC 537	U	3.7	24-	N	09:14.6	-130	47
Jul. 20	Maia	ZC 541	X	3.9	24-	N	09:15.9	-121	28
Jul. 20	Alcyone	ZC 552	K	2.9	24-	S	09:26.1	-109	20
Aug. 4	$\tau$ Scorpii	ZC 2383		2.8	74+	S	06:01.3	-130	25
Aug. 13	$\delta$ Piscium	ZC 105		4.4	80-	N	11:19.7	-130	28
Sep. 14	El Nath	ZC 810	K	1.6	50-	N	11:21.1	-130	27
Nov. 13	$\rho$ Leonis	ZC 1547	X	3.8	38-	S	11:19.7	-126	55
Dec. 4	Electra	ZC 537	U	3.7	98+	S	01:03.1	-100	20
Dec. 4	Alcyone	ZC 552	K	2.9	99+	S	01:56.9	-130	22
Dec. 10	Regulus	ZC 1487	S	1.4	66-	S	06:10.8	-120	50
Dec. 26	$\lambda$ Aqr	ZC 3353		3.7	30+	S	00:06.0	-87	20



# RASC Observer's Handbook and IOTA special events Web Sites

2024 Prediction Links, for North America and worldwide data

<https://occultations.org/publications/rasc/2024/nam24grz.htm> - Lunar grazes

<https://occultations.org/publications/rasc/2024/nam24MBoccs.htm> - Main Belt,  
the brighter events, with links to all the other pages

<https://occultations.org/publications/rasc/2024/nam24distantoccs.htm> - TNOs, etc.

<https://occultations.org/publications/rasc/2024/nam24Trojanoccs.htm> - Trojans

<https://occultations.org/publications/rasc/2024/nam24NEAoccs.htm> - Near Earth Obj.

<https://occultations.org/publications/rasc/2024/nam24MBspecialoccs.htm> - Special MB

<https://occultations.org/publications/rasc/2024/nam24Planetoccs.htm> - Major Planets

Instructions for using Occult4 to compute local and regional predictions:

<http://www.lunar-occultations.com/iota/2024iotapredictions.pdf>

Similar sites for 2025 will be set up during December and early January.