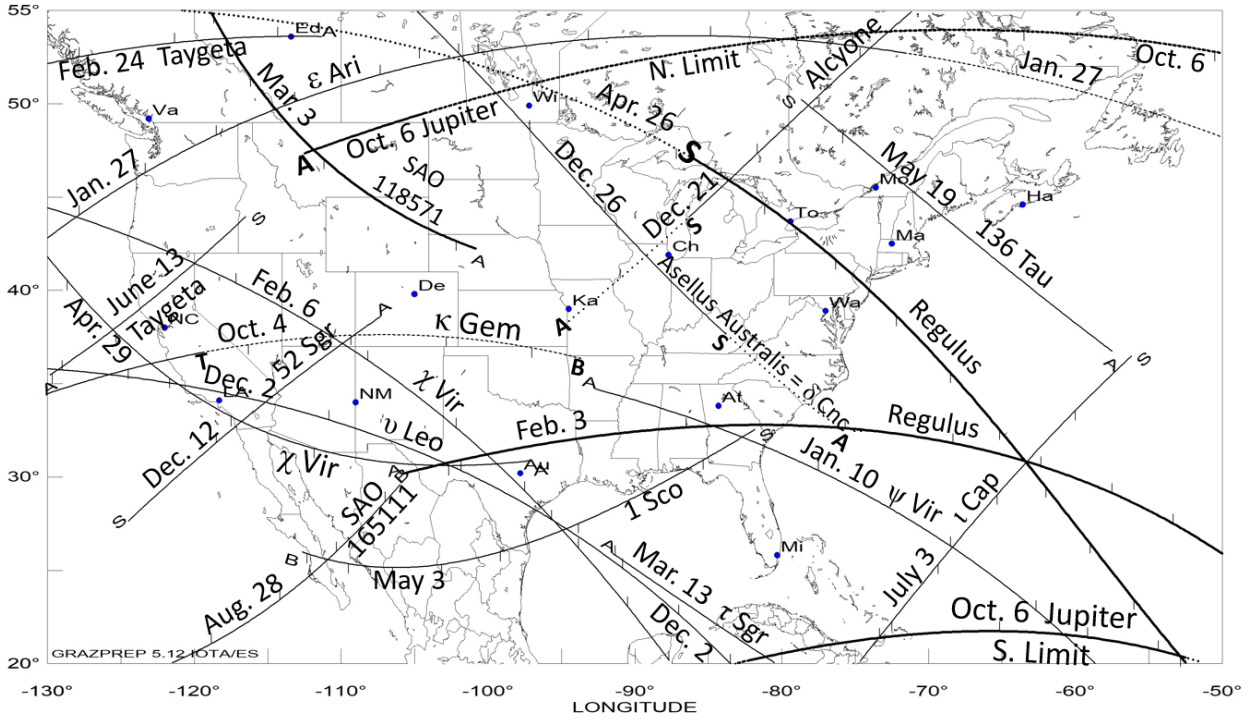
The Best Lunar Grazing Occultations in North America during 2026

The map below shows the paths of lunar grazing occultations for the 21 brighter stars and planets visible from much of North America in 2026. The events are limited to stars of magnitude 4.8 or brighter (except for 7.4-mag. and 8.7-mag. stars during two lunar eclipses) that will graze the limb of the Moon when it is at a favorable elongation from the Sun and at least as high above the horizon in degrees as the star's magnitude (e.g., a third-magnitude star is included only if its altitude is at least 3°). The map is a "false" projection, since the latitude and longitude scales are both linear. This makes it much easier for measuring coordinates or plotting locations with known coordinates than is possible with any other type of projection. The longitude scale is compressed by a factor of cos 50°. The maps are not detailed enough for locating oneself in the 2- or 3-km-wide zone where multiple disappearances of the star may occur. You can compute your own detailed predictions for grazing occultations using IOTA's free Occult4 program; for information on how to obtain and use it, see **http://www.lunar-occultations.com/iota/2026iotapredictions.pdf**. If you have trouble calculating your own predictions, detailed predictions of any graze for plotting on larger-scale maps of your region can be obtained by writing to IOTA at PO Box 20313, Fountain Hills, AZ 85268-0313 or better, send an email to **business@occultations.org.** For some grazes, IOTA overlays the predicted limit line on the very detailed maps and imagery of maps.google.com, but further corrections are needed based on the predicted lunar profile and the observer's height above sea level. A Web .htm file for this is generated by IOTA's Occult4 program, see above. The height above sea level in the area of the graze needs to be specified when generating the .htm file. Even better are Google Earth files generated with **GRAZPREP** described at the top of p. 3 of this document; when used with Google Earth, the files show the predicted lunar profile projected on the landscape.

The 2026 month and day of month, and the star or planet's name or number are given along each track on the map. Conditions are represented by three different types of lines:
solid line = dark limb, night; dashed line = bright limb, night; and dotted line, dark or bright limb, day.

The best lunar grazing occultations in North America during 2026



Thicker lines are drawn for first-magnitude stars and planets. Many tracks begin and/or end with the letter A, B, or S: A denotes that the Moon is at a low altitude, B that the bright limb interferes, and S that sunlight

or twilight interferes. The tick marks along the tracks indicate multiples of 10 min of every hour. For example, if the time for the west end of the track is 3:16.2, the tick marks proceeding eastward correspond to 3:20, 3:30, etc. Time always increases from west to east along the path. *The time ticks are on the side of the limit with an occultation,* that is north of southern limits and south of northern limits. The locations for the North American standard stations for lunar total occultation predictions given on pages 163-170 of the 2026 *Handbook* are indicated by asterisks on the graze map. 116 grazes are shown on four maps and tables, similar to what we published in the Handbook for previous years. For those maps, and extensive tables of them, see the Web page accompanying this document at **https://occultations.org/publications/rasc/2026/nam26grz.htm .**

Table of the lunar grazing occultations in North America during 2026 on the map

Date	Object Name	ZC/SAO	d	m_V	%sl	L	W.U.T.	Lo.	La.
Jan. 10	ψ Virginis	ZC 1853	V	4.8	54–	S	6:32.4	–92	35
Jan. 27	ε Arietis	ZC 440	M	4.7	60+	S	1:55.0	–130	43
Feb. 3	Regulus	ZC 1487	W	1.4	98–	W	2:01.9	–106	30
Feb. 6	χ Virginis	ZC 1815	V	4.7	79–	S	7:42.4	–130	44
Feb. 24	Taygeta	ZC 539	W	4.3	45+	S	2:36.6	–130	52
Mar. 3		SAO 118571	V	7.4	6E	N	12:12.5	–118	55
Mar. 13	τ Sagittarii	ZC 2784	V	3.3	32–	S	9:00.6	–91	26
Apr. 26	Regulus	ZC 1487	W	1.4	70+	N	0:08.8	–120	55
Apr. 29	χ Virginis	ZC 1815	V	4.7	95+	N	9:05.9	–130	42
May 3	1 Scorpii	ZC 2263	V	4.6	97–	N	9:39.2	–112	26
May 19	136 Tauri	ZC 890	V	4.6	7+	N	0:57.5	–78	50
Jun. 13	Taygeta	ZC 539	W	4.3	4–	N	12:00.5	–130	35
Jul. 3	ι Capricorni	ZC 3126		4.3	91–	N	7:52.9	–74	20
Aug. 28		SAO 165111	M	8.7	17E	S	4:45.1	–121	20
Oct. 4	κ Geminorum	ZC 1170	A	3.6	40–	N	11:24.2	–130	34
Oct. 6	Jupiter			–1.9	20–	S	8:42.3	–83	20
Oct. 6	Jupiter			–1.9	20–	N	8:54.1	–112	47
Dec. 2	υ Leonis	ZC 1685	K	4.3	38–	S	9:59.8	–130	36
Dec. 12	52 Sagittarii	ZC 2864	A	4.6	8+	S	1:23.5	–124	28
Dec. 21	Alcyone	ZC 552	K	2.9	93+	S	21:57.3	–95	38
Dec. 26	Asellus Australis	ZC 1310		3.9	91–	S	12:14.3	–104	55

The columns of the table above are explained below:

Date …….. The 2026 date
Object name …. Planet name, or star's proper name, Bayer Greek letter or Flamsteed number
ZC/SAO …… The star's ZC or Smithsonian Astrophysical Observatory (SAO) catalogue number
d …… Double star code (if the star is double or triple) – see below
m ……... The star's visual magnitude
%sl …… the percent of the Moon sunlit (+ for waxing, - for waning, E for lunar eclipse*)
L …… whether the track is a northern (N) or southern (S) limit
W.U.T. ……. the Universal Time at the west end of the track
Lo., La. ……. the longitude and latitude of the west end of the track

*In this case, the number is the % of the Moon's disk that is NOT in the umbral shadow
The map and table on the previous pages were generated with **GRAZPREP** that you can read about, and obtain. from links given in the Web page accompanying this document at **https://occultations.org/publications/rasc/2026/nam26grz.htm ,**

Occulted stars known to be double

The table below gives data for double stars for which graze predictions are given, either on the map and table above, or on the maps and tables of the 116 grazes portrayed elsewhere on this Web page. The information is from DSFILE, a comprehensive file of zodiacal double-star data compiled by Don Stockbauer, Henk Bulder, Mitsuru Sôma, David Herald, and David Dunham; most of the data for the ZC stars are in the Sato ZC catalogue. The successive columns give the ZC number of the star, the 2026 graze date, the double star code (d), the magnitudes of the brighter (A) and fainter (B) components, the separation in arcseconds, and the position angle (PA) of B from A measured eastward from north. If the star is triple, the third component's magnitude is given under C, and its separation and PA from A are given in the last columns.

The parameters are given for the epoch of the occultation, computed from orbital elements when available or from extrapolations from a long series of observations. If there is little change in the available observations, the last-observed separation and PA are used. Most components fainter than magnitude 12.0 are not listed, and some very close doubles whose parameters are not known, generally with separations less than 0.2", are also not listed. The latter include spectroscopic binaries (code U, or sometimes V) and visual occultation doubles (most codes K and X, and many Vs).

The codes have the following meanings:

A.....Double listed by Aitken and/or Burnham (ADS, BDS)
C.....Double listed by Innes, Couteau, or other visual observers
E.....secondary star of wide pair
H.....triple, with close occultation pair and third visual component; prediction uses a mean position (U,orV & M)
J.....Single-line spectroscopic binary
K.....U or V, but duplicity doubtful, only reported "gradual" from a past visual occultation observation
L.....close triple star (only two stars often listed because inner pair is often spectroscopic; J or U, & V; all V; or all J)
M.....mean position (centre of light) of a close pair is used by the ZC and/or XZ catalogue
O.....orbital elements available and used to calculate the separation and PA
T.....visual triple star (V and M for the closer pair, and A or C; or all A and/or C)
U.....Double, separation 0.05″ or less, usually a 2-line spectroscopic binary
V.....Close double discovered by occultation or by interferometry
W.....Triple, J or U, and A or C
Y.....triple, K or X (visual A component) and A or C (C component)
Z.....triple, O (A/B components) and V (C component) (O and A or C, or V or X or L)

Some close pairs have rapid orbital motion such that the current PA is unknown.

STARS OCCULTED IN 2026 AND KNOWN TO BE DOUBLE

ZC#	Date	d	A	B	Sep. ″	PA °	C	Sep. ″	PA °
440	Jan. 27	M	5.2	5.6	1.5	208			
539	Feb. 24, Jun. 13	W	4.6	6.1	0.01		11.0	72.	329
569	Feb. 24	O	5.8	6.2	0.6	204			
885	Feb. 26, May 19, Sep. 5	Y	5.9	7.2	0.01	270	12.0	15.0	232
1170	Feb. 27, Oct. 4	A	3.7	8.2	7.6	242			
1221	May 21	V	5.9	10.0	0.4	110			
1487	Feb. 3, Apr. 26	W	1.4	9.5	0.002	8.2	175.	307	
1531	Mar. 30	Y	6.7	6.7	0.02	18	10.9	33.6	132
1550	Jan. 7	H	6.0	8.0	0.001	7.7	2.2	157	
2848	Feb. 14	A	5.6	8.6	7.8	142			
2864	Dec. 12	A	4.7	9.2	2.4	176			
3078	May 9	M	5.0	7.4	0.3	281			
X30724	Aug. 28	T	8.8	11.4	0.4	71	10.0	36.2	158

Names of occulted stars

The stars that are occulted by the Moon are stars that lie along the zodiac; hence they are known by their number in the Zodiacal Catalogue (ZC) compiled by James Robertson and published in the *Astronomical Papers Prepared for the Use of the American Ephemeris and Nautical Almanac, Vol. 10*, Part 2 (U.S. Government Printing Office, Washington, 1940). Robertson's ZC has been out of print for many years. In 1986, Isao Sato, a member of the Lunar Occultation Observers Group in Japan, republished the ZC. This new edition is based on the epoch J2000 and includes much new data, particularly on double stars. Since stars are not usually recognized by their ZC numbers, the Bayer designations or Flamsteed numbers of the stars occulted during 2026 are given in the table below. The ZC and larger XZ (now version XZ80Q) catalogues, updated in 2018 by D. Herald using Gaia data, are available through IOTA's website.

NAMES OF STARS OCCULTED IN 2026

ZC	Name	ZC	Name	ZC	Name
68	51Psc	1170	κ Gem	1853	ψ Vir
370	26 Ari	1221	9 Cnc	1884	49 Vir
399	μ Ari	1224	μ Cnc	1967	83 Vir
440	ε Ari	1277	η Cnc	1970	85 Vir
518	7 Tau	1295	39 Cnc	2263	1 Sco
529	11 Tau	1299	ε Cnc	2276	4 Sco
537	17 Tau (Electra)	1310	δ Cnc (Asellus Australis)	2287	π Sco
538	18 Tau	1343	FZ Cnc	2383	τ Sco (Alniyat)
539	19 Tau (Taygeta)	1415	7 Leo	2784	τ Sgr
541	20 Tau (Maia)	1434	ψ Leo	2861	51 Sgr
542	21 Tau (Asterope)	1439	18 Leo	2864	52 Sgr
543	22 Tau (Sterope II)	1449	23 Leo	3069	20 Cap
545	23 Tau (Merope)	1466	ν Leo	3078	η Cap (Chow)
552	η Tau (Alcyone)	1487	α Leo (Regulus)	3113	30 Cap
560	27 Tau (Atlas)	1525	44 Leo	3126	ι Cap (Tae)
561	28 Tau (Pleione)	1531	45 Leo	3173	42 Cap
616	44 Tau	1547	ρ Leo (Shaomin)	3206	μ Cap (Kuh)
771	V1156 Tau	1550	49 Leo	3253	38 Aqr
810	β Tau (El Nath)	1589	56 Leo	3334	67 Aqr
890	136 Tau	1635	75 Leo	3353	λ Aqr
1008	49 Aur	1637	76 Leo	3459	11 Psc
1055	37 Gem	1652	79 Leo	3467	13 Psc
1099	52 Gem	1685	υ Leo	3508	21 Psc
1117	57 Gem	1815	χ Vir	3515	25 Psc

General Lunar Occultations, especially Total Lunar Events

General information about lunar occultations, and aboiut predictions of total occultations, from the Handbook not included above, are given in lunar26.pdf or the files it references, usually given there in red font.

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David and Joan Dunham, dunham@starpower.net, 2025 December 24