

Interesting Astronomical Events for 2018

By Mark Jones

Prairie State Park

June 11, 2017

References:

<https://skysafariastronomy.com/>

<http://astropixels.com/ephemeris/astrocal/astrocal2017cst.html>

<http://www.seasky.org/astronomy/astronomy-calendar-2017.html>

<http://www.calsky.com/cs.cgi>

RASC Handbook 2018

All Photos by Mark Jones

Unless noted

M15 Sep 30, 2017

Ballwin MO

Sun Events 2018

**Northern Limit Page and Lindbergh
Southern Limit Watson and
Lindbergh
Red Lines are 72,100 ft long**

- Jan 3 1:00 - Perihelion (distance to sun: 147 mKm)
- Mar 20 10:15 - March Equinox
- Jun 21 4:07 - Northern Solstice (declination: +23.434°)**
- Jul 6 11:00 - Aphelion (distance to sun: 152 mKm)
- Sep 22 19:54 – Sep Equinox
- Dec 21 17:23 - Southern Solstice (declination: -23.435°)**

Google Earth



Full Moon Events 2018

Smallest

Jun 27 – Second smallest of FM 2018

Jul 27 – Smallest of FM 2018 (29.41 arc-min)

Largest

Jan 1 – Largest FM of 2018 (33.16 arc-min)

Jan 31 – Second largest FM of 2018



Apogee Moon
Jan 15, 2014
406,532 km

Perigee Moon
Nov 13, 2016
350,853 km

Canon DSLR FL=300mm

Jan 1, 2018 - 3rd largest of the last 10 years. The biggest of the next 10 years. Former larger FM was Nov 14, 2016. Next larger FM is Nov 25, 2034

Other Moon Events 2018

Jan 2 - Northern most FM of 2018.

Jun 27 - Southern most FM of 2018.



Moon rise Sep 8, 2017

Arch from 17 miles away



Other Moon Events 2018

Lunar "X" (local start times + ~2 hours)

- Jan 23 23:42 Alt=1°
- Mar 24 00:57 Alt=10°
- **May 23 01:02 Alt=17°**
- July 20 00:14 Alt=6°
- **Dec 14 17:24 Alt=41°**

Local STL times

Favorable Dates in Yellow

Data provided by Cloudy Nights

<https://www.cloudynights.com/topic/598806-2018-lunar-x-predictions/>

Lunar X - Mar 15, 2016



Other Moon Events 2018

Golden Handle on the Moon

Sun rises on the Jura mountains, while Sinus Iridium is still in shadow

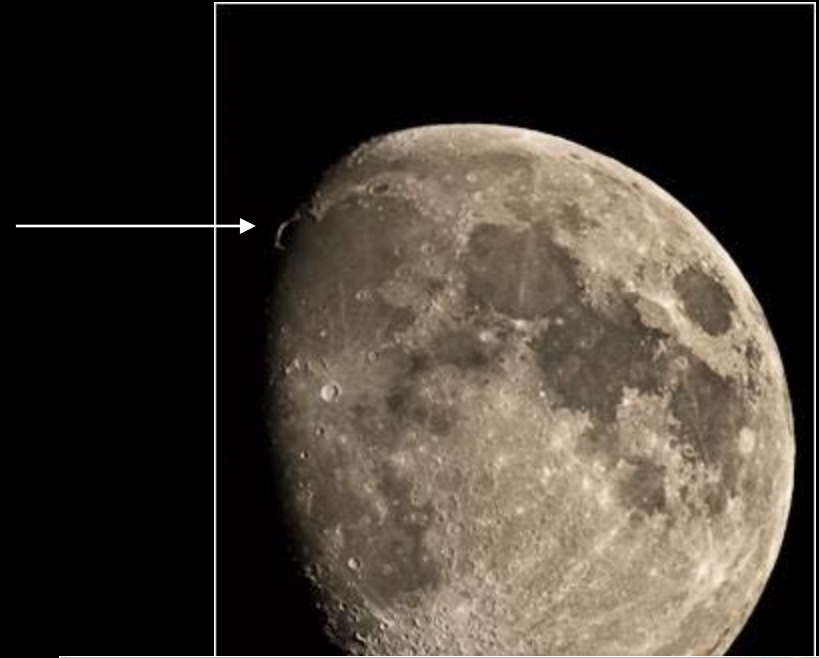
- Jan 26 – 19:00 Alt=64°
- Mar 27 – 2:30 Alt=22°
- Apr 25 – 15:36 Alt=2°
- Jul 22 – 22:36 Alt=18°
- Sep 19 – 18:48 Alt=21°
- Nov 17 – 19:54 Alt=44°

Start times. Event visible up to 7 hours

Data provided by CalSky

Photos by Werner Priller

Local STL times



Important Dates 2018

- **Mar 11 – Daylight Saving Time Begins**
- **April 21 – Astronomy Day**
- **June 22-24 - MSRAL Springdale, AR**
- **Jul 11-14 – ALCON Minneapolis, MN**
- **Jul 26 – Mars Opposition**
- **Oct 13 – Astronomy Day**
- **Nov 4 – Daylight Saving Time Ends**

2018 Meteor Showers

- January 3 Quadrantids; ZHR=40 (FM+1day)
- April 22 Lyrids; ZHR=20 (FQ)
- **May 5 Eta Aquarids; ZHR=60 (FM+5days)**
- July 28 Delta Aquarids; ZHR=20 (FM)
- **Aug 12 Perseids; ZHR=60 (NM+2day)**
- Oct 21 Orionids; ZHR=20 (FM-3days)
- Nov 17 Leonids; ZHR=20 (FQ+3days)
- Dec 14 Geminids; ZHR=120 (FQ-1day)

Yellow=Favorable Moon Conditions

Eclipses 2018

Jan 31 - Total Lunar Eclipse

– Western N America

Feb 15 – Partial Solar Eclipse

– not visible from US

Jul 13 - Partial Solar Eclipse

– not visible from US

Jul 27 - Total Lunar Eclipse

– not visible from US

Aug 11 - Partial Solar Eclipse

– not visible from US

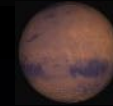
Yellow=Favorable Conditions

Planet Oppositions 2018

- Venus GEE – Aug 17 (24.5 arc-sec)
 - Mars – July 27 (dia=24.3 arc-sec)
 - Jupiter – May 9 (dia=45 arc-sec)
 - Saturn – June 27 (dia=18.3 arc-sec, 25.6° ring tilt)
 - Uranus – Oct 24 (dia=3.7 arc-sec)
 - Neptune – Sep 7 (dia=2.32 arc-sec)
- **Yellow=Favorable Conditions**



Venus



Mars



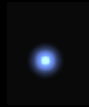
Jupiter



Saturn



Uranus



Neptune

Top to Bottom:
Relative sizes of

Venus 2018

- Evening Star

Jan 8 - superior conjunction

May 20th northmost declination, near M35

Jun 14th latest setting time 11:02pm

Aug 17 - Venus Greatest Elongation (45.9° East, in the evenings, brightness: -4.5 mag)

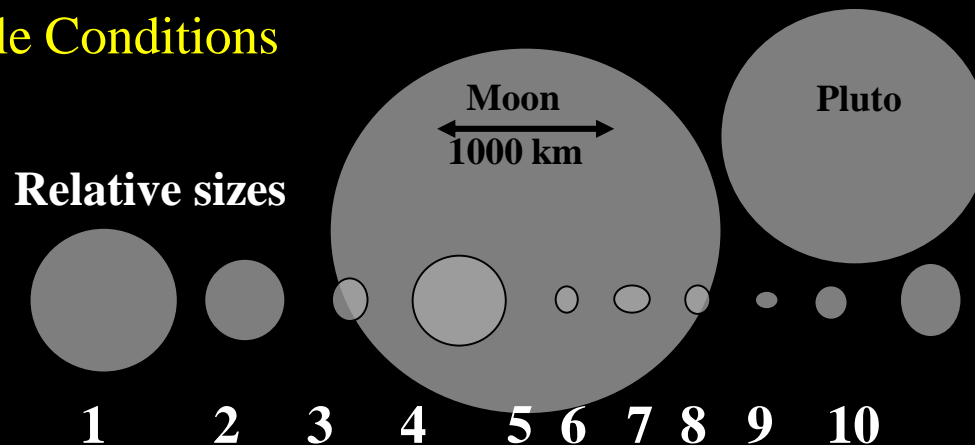
- Evening and Morning Star!

Oct 26 – Inferior Conjunction (6° south of Sun. -4.3 mag, dia=61.3 arc-sec)

Small Body Oppositions 2018

Jan	31	Dwarf Planet Ceres (1) at opposition, mag 6.9 (2018)
Oct	29	Asteroid Pallas (2) at opposition, mag 8.2 (2017)
Nov	17	Asteroid Juno (3) at opposition, mag 7.4
Jun	19	Asteroid Vesta (4) at opposition, mag 5.3
Dec	28	Asteroid Hebe (6) at opposition, mag 8.4
Oct	30	Asteroid Iris (7) at opposition, mag 6.9 (2017)
Jan	2	Asteroid Flora (8) at opposition, mag 8.2 (2018)
Jan	16	Asteroid Metis (9) at opposition, mag 9.7
Sep	23	Asteroid Hygiea (10) at opposition, mag 10.1
Jul	12	Dwarf Planet Pluto (134340) at opposition, mag 14.2

Yellow=Favorable Conditions



Lunar/Aldebaran Conjunctions 2018

Mon	Day	Time GMT	Event
Jan	27	10:09	Aldebaran 0.7°S of Moon
Feb	23	17:07	Aldebaran 0.7°S of Moon
Mar	22	22:33	Aldebaran 0.9°S of Moon
Apr	19	4:45	Aldebaran 1.1°S of Moon
Jul	10	9:30	Aldebaran 1.1°S of Moon
Aug	6	18:35	Aldebaran 1.1°S of Moon
Sep	3	1:34	Aldebaran 1.2°S of Moon
Sep	30	7:06	Aldebaran 1.4°S of Moon
Oct	27	13:04	Aldebaran 1.6°S of Moon
Nov	23	21:11	Aldebaran 1.7°S of Moon
Dec	21	7:31	Aldebaran 1.7°S of Moon



January - March

M56 Sep 30, 2017

Ballwin MO

Jan–Mar 2018 Conjunctions

Mon	Day	Time GMT	Event
Jan	3	19:50	Beehive 2.3°N of Moon
Jan	5	7:24	Regulus 0.9°S of Moon
Jan	13	8	Mercury 0.7° of Saturn
Jan	27	10:09	Aldebaran 0.7°S of Moon
Jan	31	7:19	Beehive 2.3°N of Moon
Feb	1	18:24	Regulus 0.9°S of Moon
Feb	11	14:46	Saturn 2.5°S of Moon
Feb	23	17:07	Aldebaran 0.7°S of Moon
Feb	27	17:28	Beehive 2.3°N of Moon
Mar	1	5:09	Regulus 0.9°S of Moon
Mar	4	6	Mercury 1.1° of Venus
Mar	11	2:37	Saturn 2.2°S of Moon
Mar	19	8	Mercury 3.8° of Venus
Mar	22	22:33	Aldebaran 0.9°S of Moon
Mar	27	0:52	Beehive 2.2°N of Moon
Mar	28	13:38	Regulus 1.0°S of Moon



- Jan 7, 2018
- Jupiter/Mars Conjunction
- 5:00am
- AZ=134 deg
- EL=21 deg
- Separation = 0.2 deg!

- Jupiter's moons are “doubled up” on each side

- Jupiter mag= -1.8
- Mars mag= +1.4



Mars

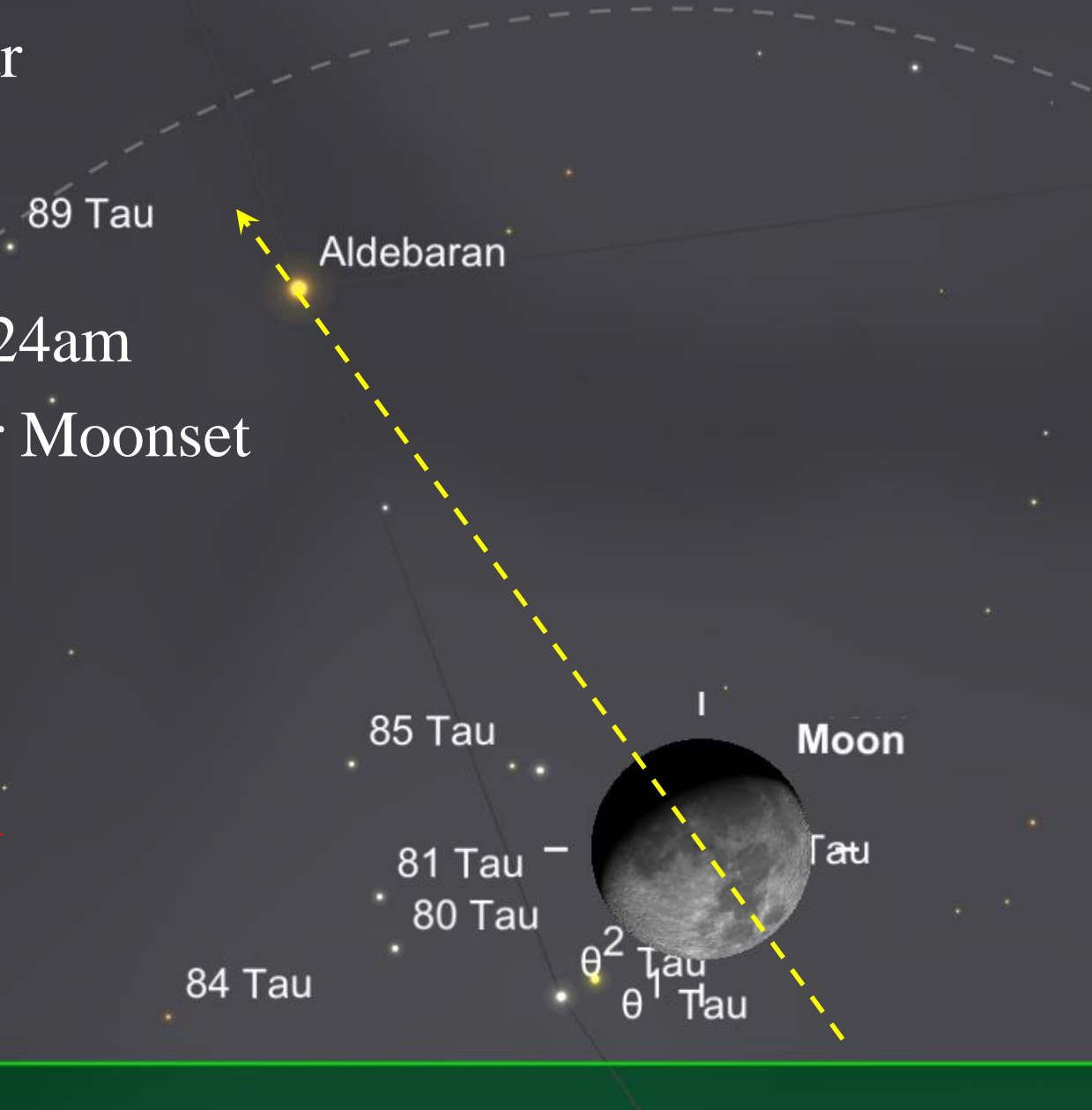


W 290° 51' Alt +00° 36'

2.7° x 4.3°

- Jan 27, 2018
- Moon Occults Star
- Name: 75 Tauri
- Mag=4.96
- Occult Begins: 2:24am
- Occult Ends: after Moonset
- AZ=286 deg
- EL=6 deg

- **Very near horizon**



Full Moon Events 2018

Smallest

Jun 27 – Second smallest of FM 2018

Jul 27 – Smallest of FM 2018 (29.41 arc-min)

Largest

Jan 1 – Largest FM of 2018 (33.16 arc-min)

Jan 31 – Second largest FM of 2018



Apogee Moon
Jan 15, 2014
406,532 km

Perigee Moon
Nov 13, 2016
350,853 km

Canon DSLR FL=300mm

Jan 1, 2018 - 3rd largest of the last 10 years. The biggest of the next 10 years. Former larger FM was Nov 14, 2016. Next larger FM is Nov 25, 2034

Jan 31 - Total Lunar Eclipse

Partial Begins: 5:49am

AZ=280 deg

EL 14 deg

Totality Begins: 6:52am

AZ=289 deg

EL=2.5 deg

Moon Sets: 7:07am

AZ=291 deg

Sunrise: 7:08am

Very near horizon

Moon south of M44 in Cancer

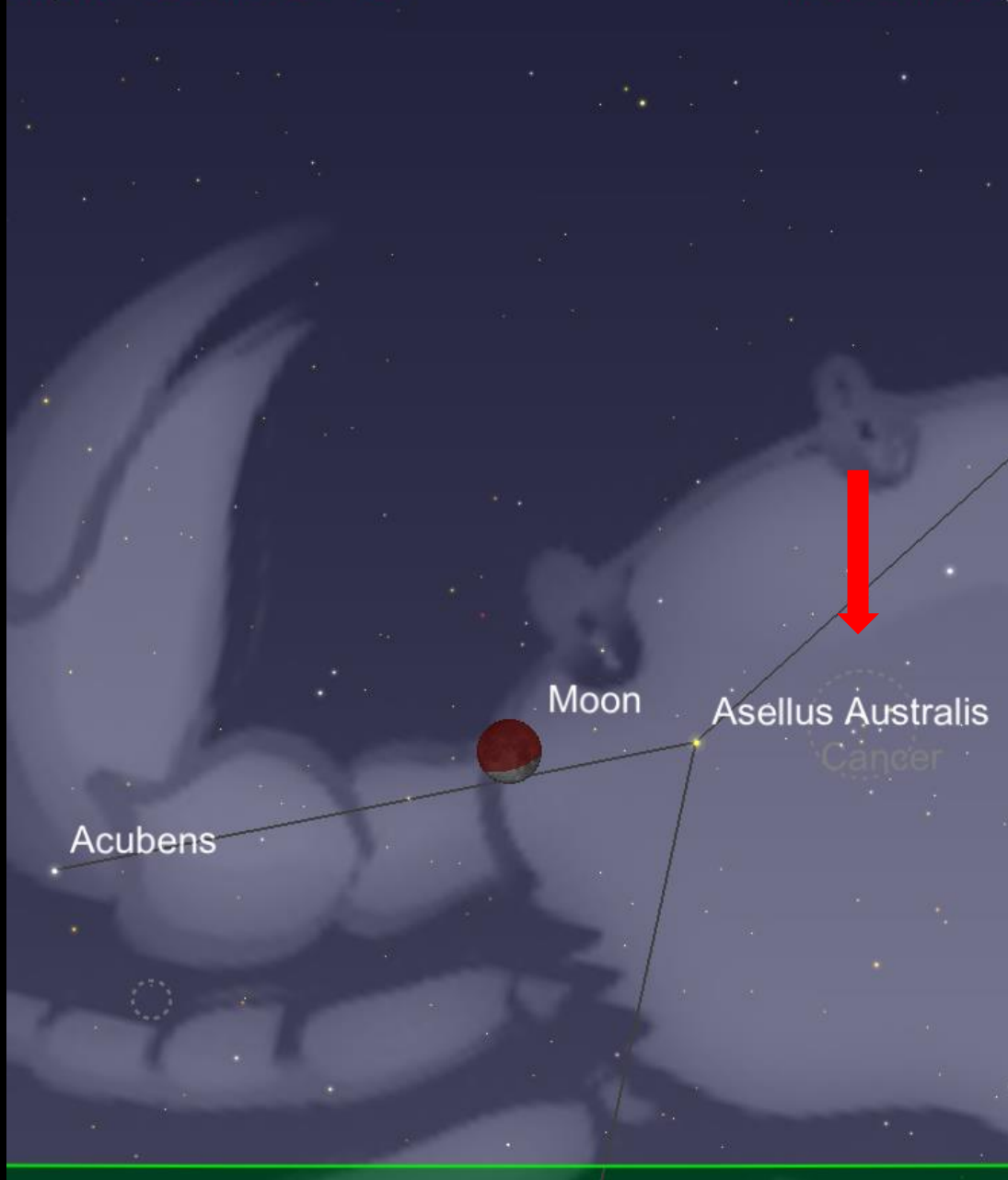
Images from Sky Safari

Current Location

Wed Jan 31, 2018 06:43 AM

W 287° 58' Alt +04° 08'

11.0° x 17.5°

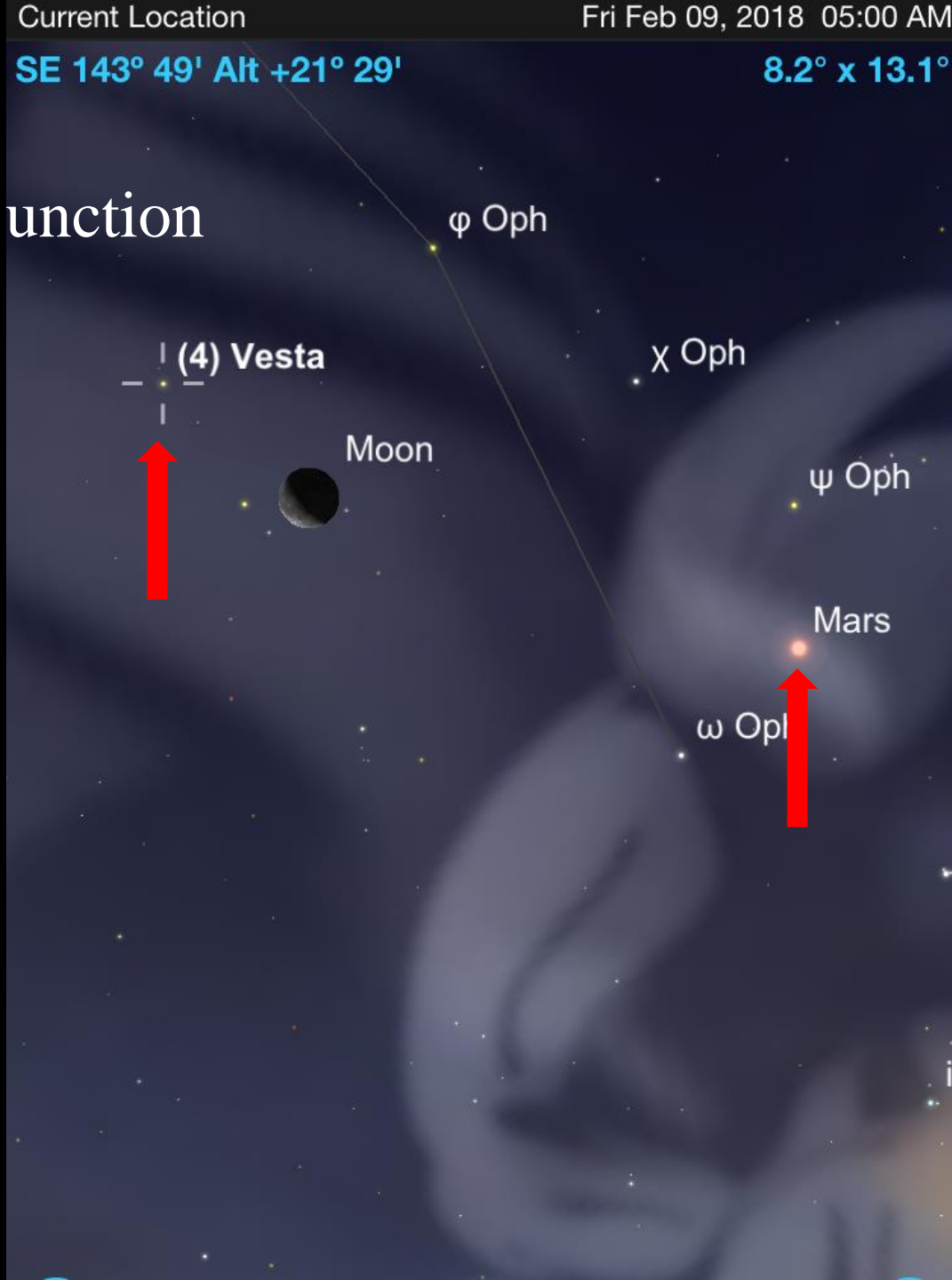


SE 143° 49' Alt +21° 29'

8.2° x 13.1°

- Feb 9, 2018
- Moon/Mars/Vesta Conjunction
- 5:00am
- AZ=143 deg
- EL=21 deg

- Mars mag=+1.1
- Vesta mag=+7.6



W 263.4° Alt +3.0°

15.9° x 25.2°

- Mar 3, 2018
- Venus/Mercury Conjunction
- 6:00pm
- AZ=263 deg
- EL=3 deg
- Separation = 1.4 deg
- Venus mag= -3.9
- Mercury mag= -1.2
- **Very near horizon**



W 275° 56' Alt +08° 42'

1.0° x 1.5°

- Mar 28, 2018
- Venus/Uranus Conjunction
- 8:00pm
- AZ=275 deg
- EL=8 deg
- Separation = 0.07 deg!!

- Venus mag= -3.9
- Uranus mag= +5.9





April - June

M13 Sep 30, 2017

Ballwin MO

Apr–Jun 2018 Conjunctions

Mon	Day	Time GMT	Event
Apr	7	12:50	Saturn 1.9°S of Moon
Apr	19	4:45	Aldebaran 1.1°S of Moon
Apr	23	6:17	Beehive 1.9°N of Moon
Apr	24	16:47	Venus 3.4°S of Pleiades
Apr	24	19:39	Regulus 1.2°S of Moon
May	2	13:29	Venus 6.3°N of Aldebaran
May	4	20:31	Saturn 1.7°S of Moon
May	13	17:21	Mercury 2.4°N of Moon
May	20	11:57	Beehive 1.7°N of Moon
May	22	0:53	Regulus 1.4°S of Moon
Jun	1	1:20	Saturn 1.6°S of Moon
Jun	8	3:37	Venus 4.6°S of Pollux
Jun	16	13:13	Venus 2.3°N of Moon
Jun	16	19:38	Beehive 1.5°N of Moon
Jun	18	7:25	Regulus 1.7°S of Moon
Jun	20	2:21	Venus 0.4°N of Beehive
Jun	24	21:37	Mercury 4.7°S of Pollux
Jun	28	3:59	Saturn 1.8°S of Moon

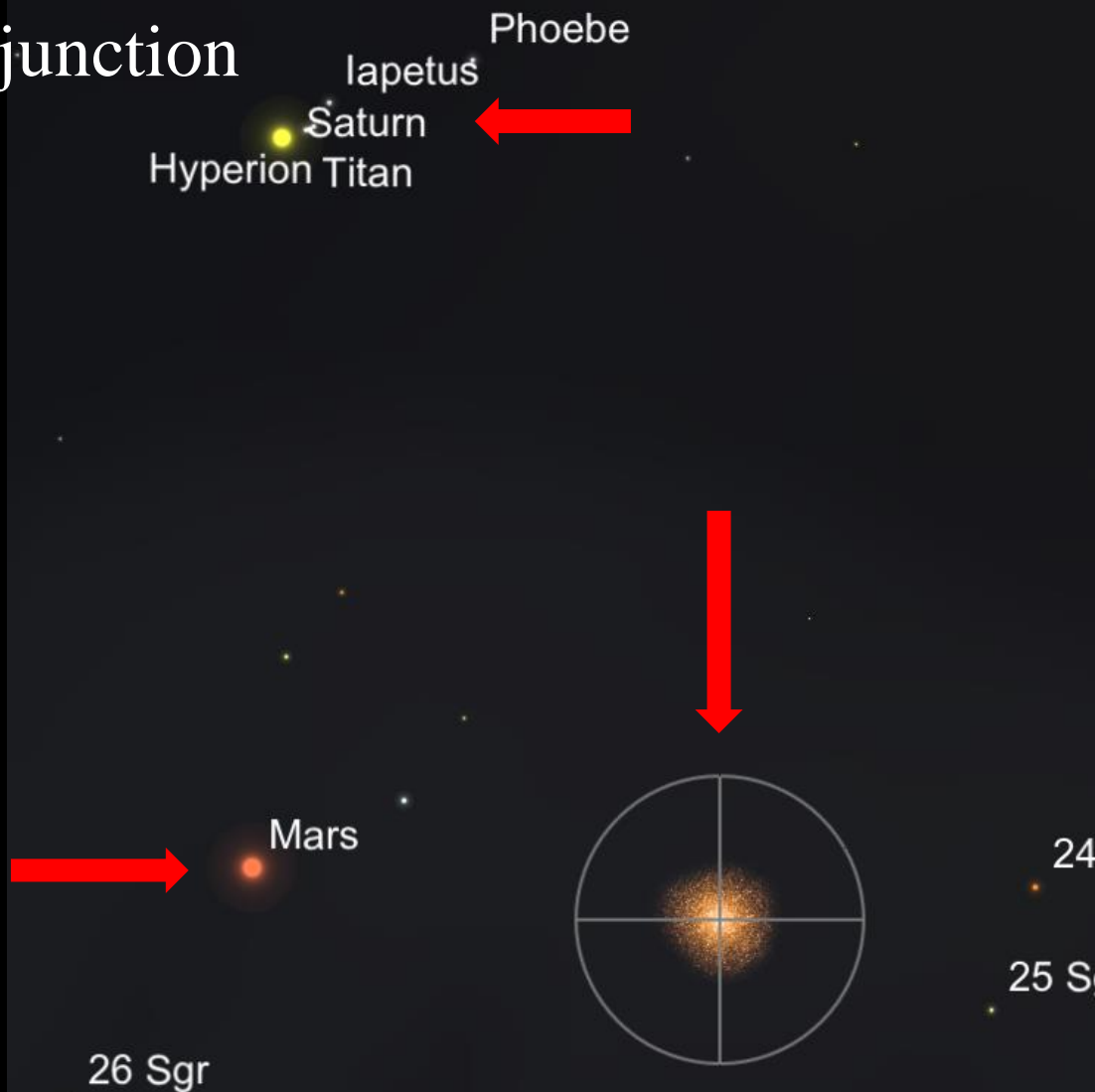
S 157° 39' Alt +24° 33'

2.0° x 3.2°

- Apr 3, 2018
- Mars/Saturn/M22 Conjunction

- 5:24am
- AZ=157 deg
- EL=24 deg
- Separation = 1.3 deg

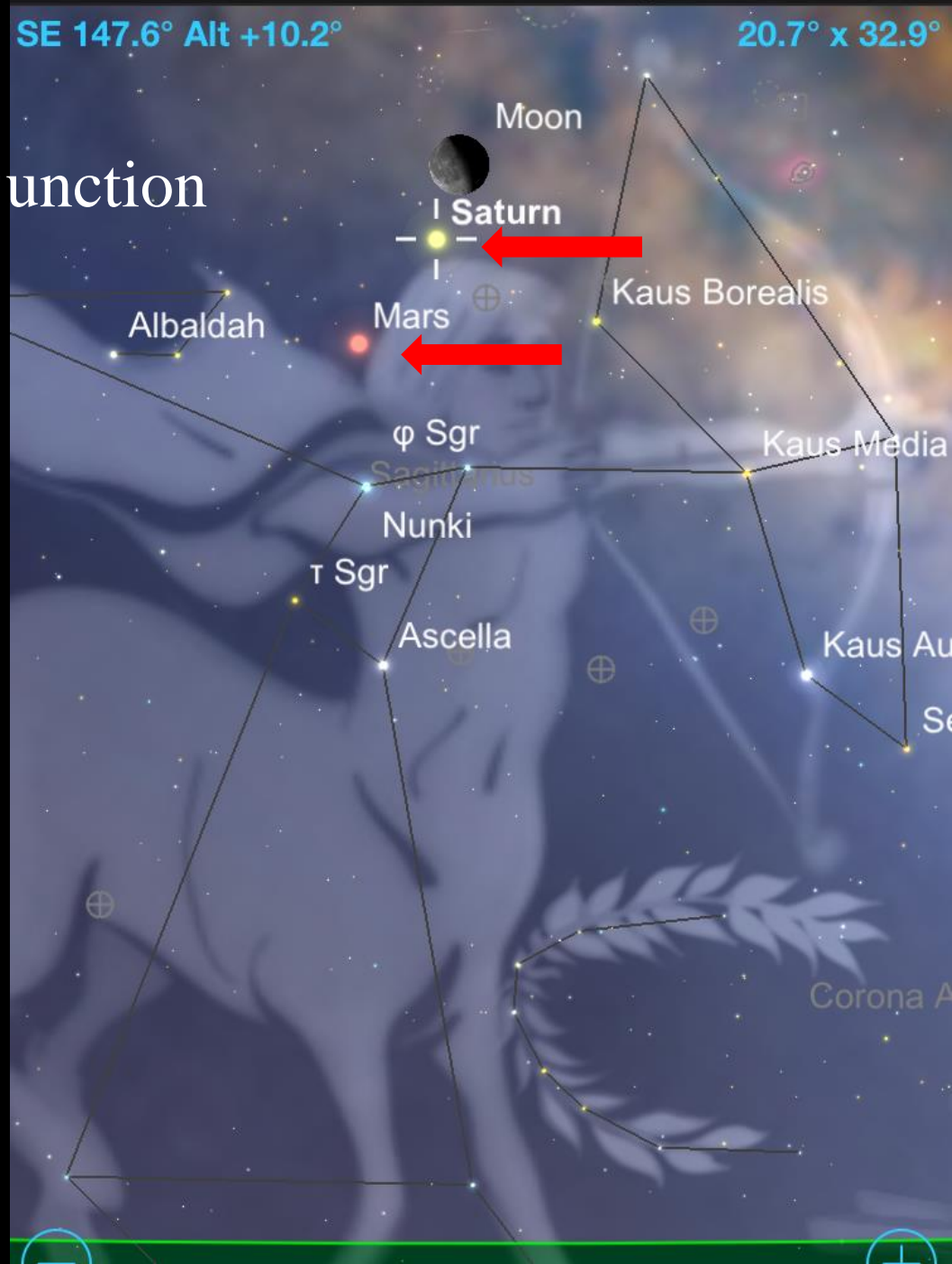
- Mars mag= +0.2
- Saturn mag= +0.5
- M22 Cluster mag=5.1



SE 147.6° Alt +10.2°

20.7° x 32.9°

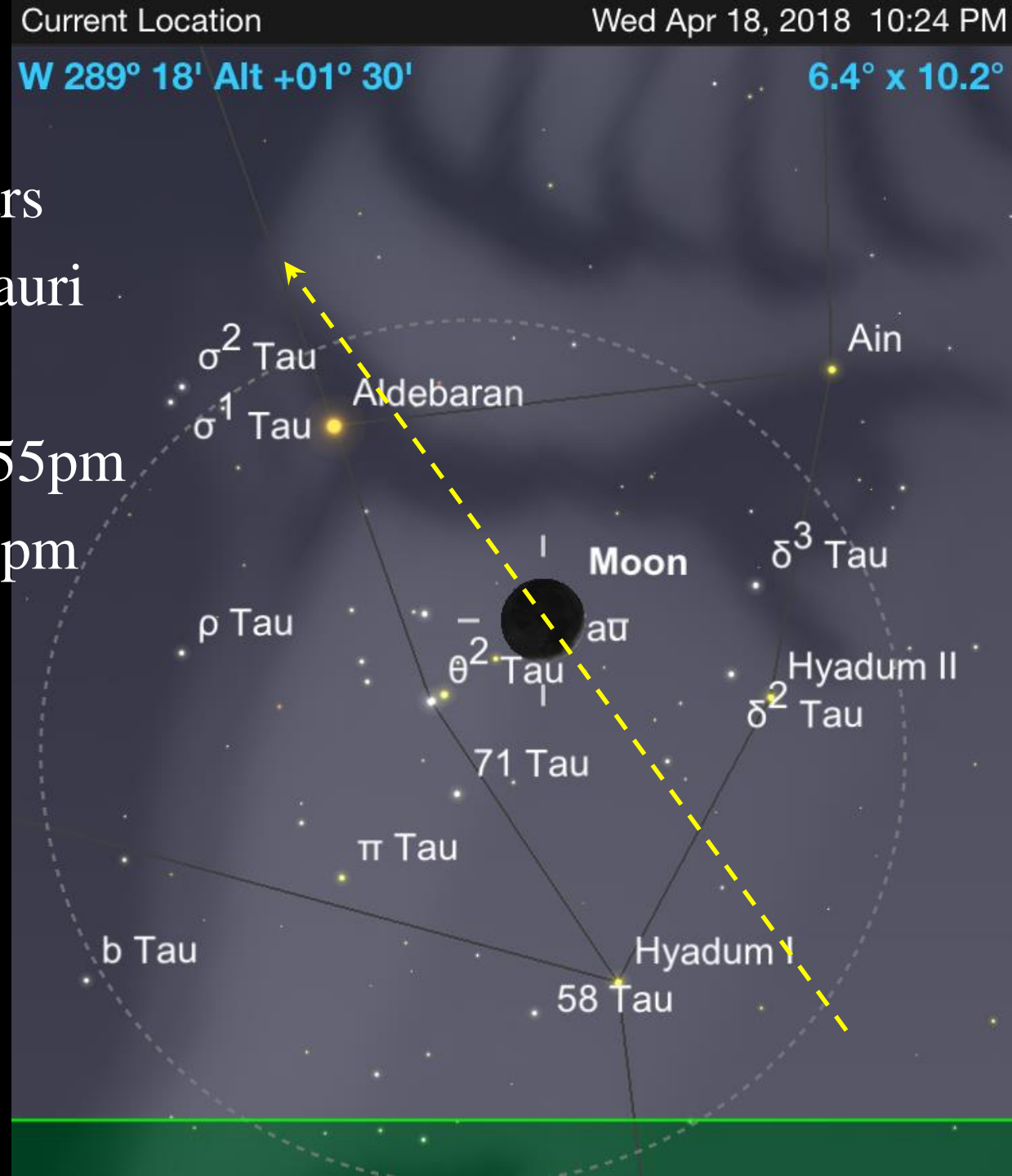
- Apr 7, 2018
- Mars/Saturn/Moon Conjunction
- 4:24am
- AZ=147 deg
- EL=10 deg
- Separation = 1.2 deg
- Mars mag= +0.2
- Saturn mag=+0.5



W 289° 18' Alt +01° 30'

6.4° x 10.2°

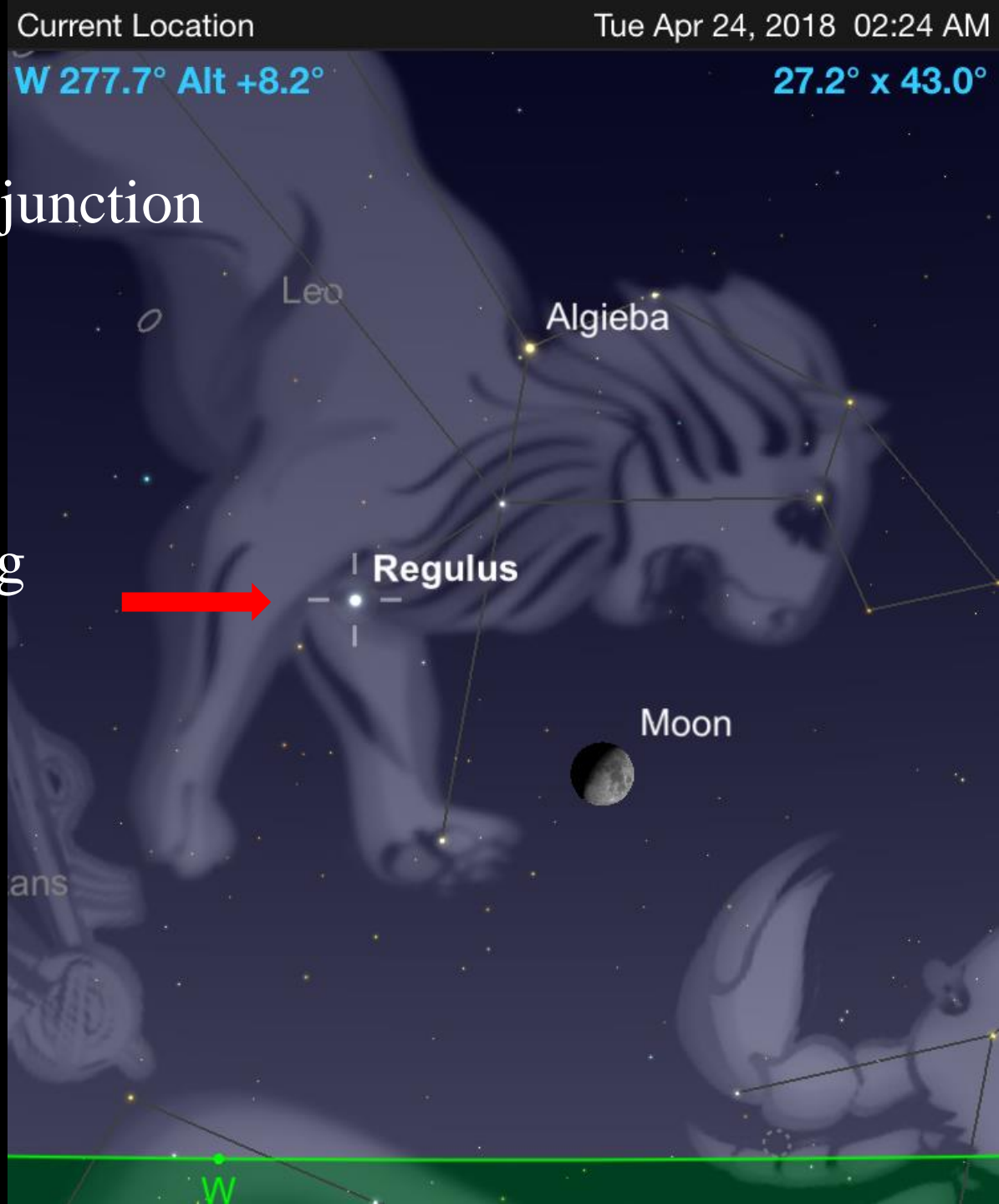
- Apr 18, 2018
- Moon Occults Stars
- Name: 55 & 63 Tauri
- Mag=6.9 & 5.6
- Occult Begins: 5:55pm
- Occult Ends: 7:09pm
- AZ=260 deg
- EL=38 deg



W 277.7° Alt +8.2°

27.2° x 43.0°

- Apr 24, 2018
- Moon/Regulus Conjunction
- 2:24am
- AZ=227 deg
- EL=8 deg
- Separation = 1.2 deg
- Regulus= +1.4



- Apr 24, 2018
- Venus/Pleiades Conjunction
- 8:00pm
- AZ=282 deg
- EL=21 deg

- Venus mag= -3.9

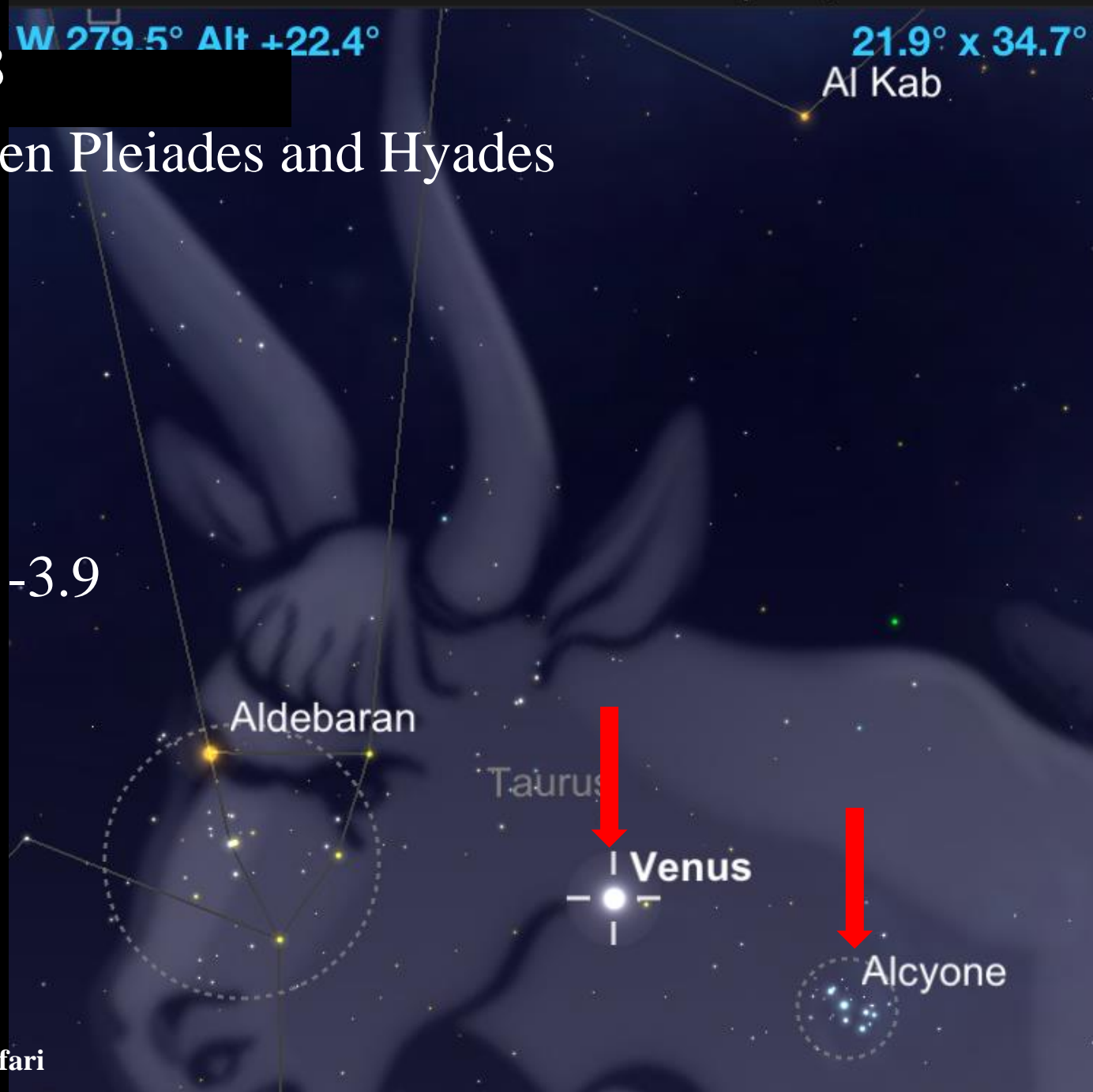


W 279.5° Alt +22.4°

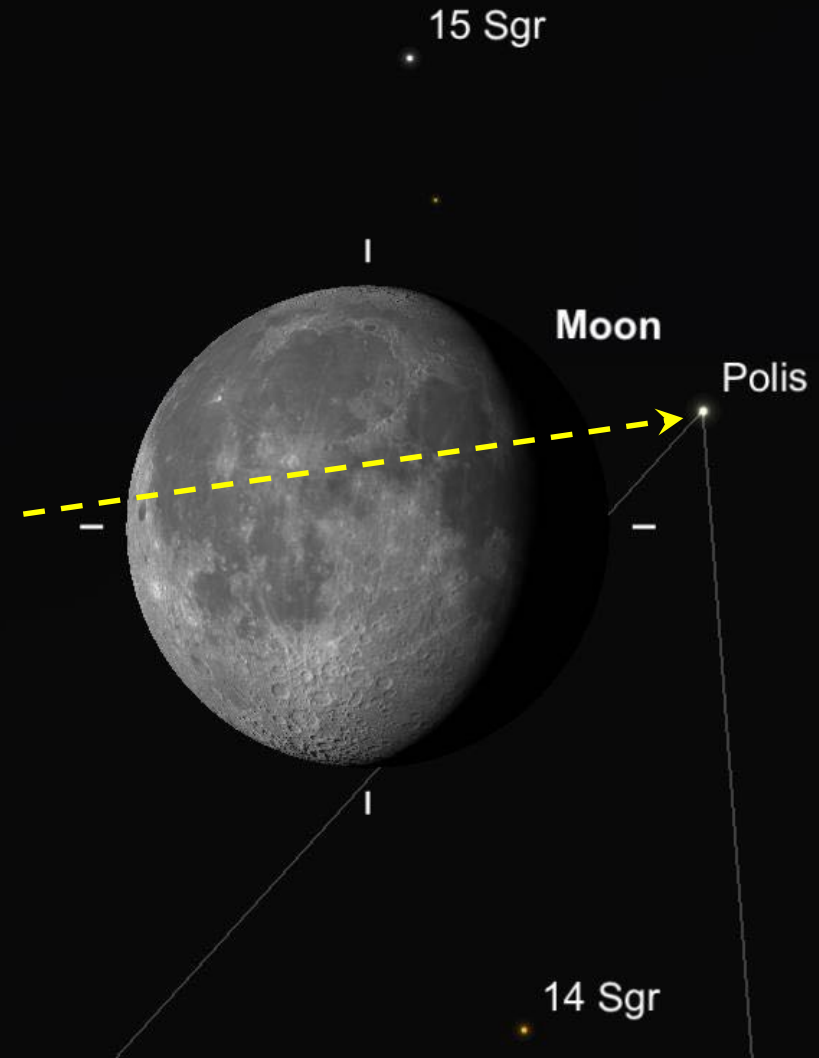
21.9° x 34.7°
Al Kab

- Apr 27, 2018
- Venus between Pleiades and Hyades
- 8:00pm
- AZ=279 deg
- EL=22 deg

- Venus mag= -3.9



- May 4, 2018
- Moon Occults Double Star
- Name: Polis
- Constellation: Mu Sagitari
- Mag=3.83 & 10.48
- Sep= 16.9 arc-sec
- Occult Begins: 3:09am
- Occult Ends: 4:27am
- AZ=186 deg
- EL=30 deg



Jupiter 2018

Tue May 08, 2018 12:55 AM

55.9° x 86.5°

- **May 9 – Opposition (Libra)**

- 4.40AU
- 36.6 light-minutes
- -2.52 mag



Jupiter 2018

- **May 9 – Opposition (Libra)**
 - Dia = 44.8 arc-sec
 - Feb 2017 Aphelion
 - Jan 2023 Perihelion
- **Moons apparent size at Opposition**
 - **Io: 1.1 arc-sec**
 - **Europa: 1.0 arc-sec**
 - **Ganymede: 1.7 arc-sec**
 - **Callisto: 1.5 arc-sec**

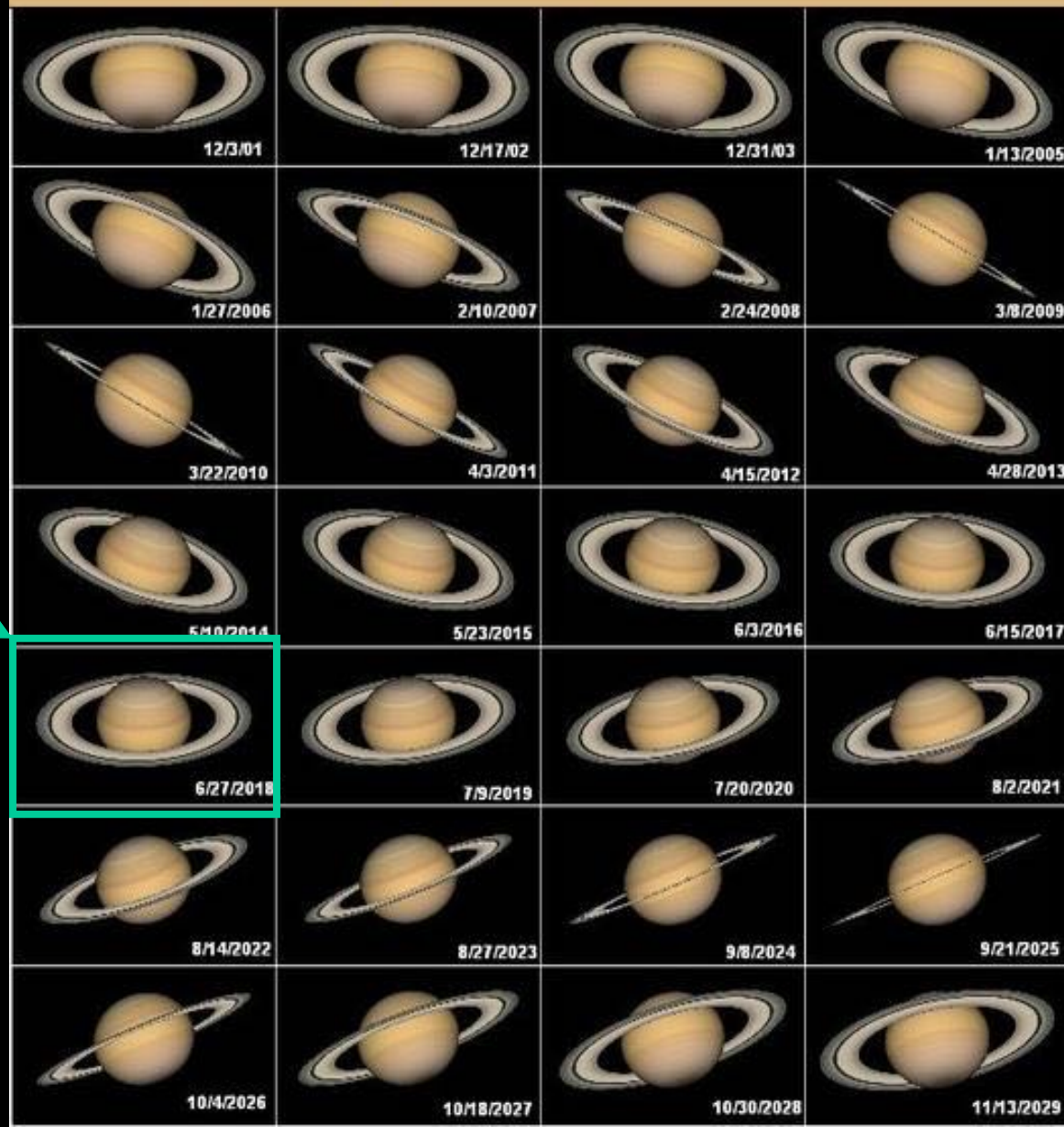
Jupiter to scale with moons



Saturn 2018

- May 2017 – Summer begins on N. Hemisphere
- April 2018 – Aphelion
- 2017 rings tilted to maximum possible
- 2018 rings tilted 26.6 degrees

Saturn Oppositions: 2001 - 2029



The Saturn views were simulated with a computer program written by Tom Ruen. (Created here for public domain)

Venus 2018

- Evening Star

May 20th northmost declination, near M35

Jun 14th latest setting time 11:02pm



Venus 2018

- Evening Star

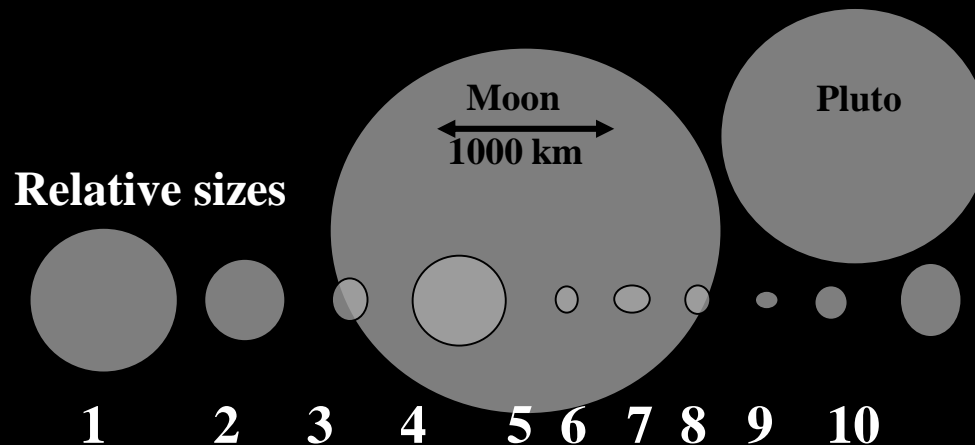
Jun 14th latest setting time 11:02pm



Venus Jul 31 2015 8:49pm Set Time

Small Body Oppositions 2018

Jan	31	Dwarf Planet Ceres (1) at opposition, mag 6.9 (2018)
Oct	29	Asteroid Pallas (2) at opposition, mag 8.2 (2017)
Nov	17	Asteroid Juno (3) at opposition, mag 7.4
Jun	19	Asteroid Vesta (4) at opposition, mag 5.3
Dec	28	Asteroid Hebe (6) at opposition, mag 8.4
Oct	30	Asteroid Iris (7) at opposition, mag 6.9 (2017)
Jan	2	Asteroid Flora (8) at opposition, mag 8.2 (2018)
Jan	16	Asteroid Metis (9) at opposition, mag 9.7
Sep	23	Asteroid Hygiea (10) at opposition, mag 10.1
Jul	12	Dwarf Planet Pluto (134340) at opposition, mag 14.2



Full Moon Events 2018

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Jul 27 – Smallest of FM 2018 (29.41 arc-min)

Largest

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Apogee Moon
Jan 15, 2014
406,532 km

Perigee Moon
Nov 13, 2016
350,853 km

Canon DSLR FL=300mm

Jan 1, 2018 - 3rd largest of the last 10 years. The biggest of the next 10 years. Former larger FM was Nov 14, 2016. Next larger FM is Nov 25, 2034

Other Moon Events 2018

Jan 2 - Northern most FM of 2018.

Jun 27 – Southern most FM of 2018.



Moon rise Sep 8, 2017

Arch from 17 miles away



Saturn 2018

Thu Jun 28, 2018 01:02 AM

22.1° x 34.9°

- Jun 27 – Opposition
 - Sagittarius
 - 9.048AU
 - 75 light-minutes
 - 0.0 mag

Full Moon next to Saturn
Separation = 1.8 deg



Saturn 2018

Current Location

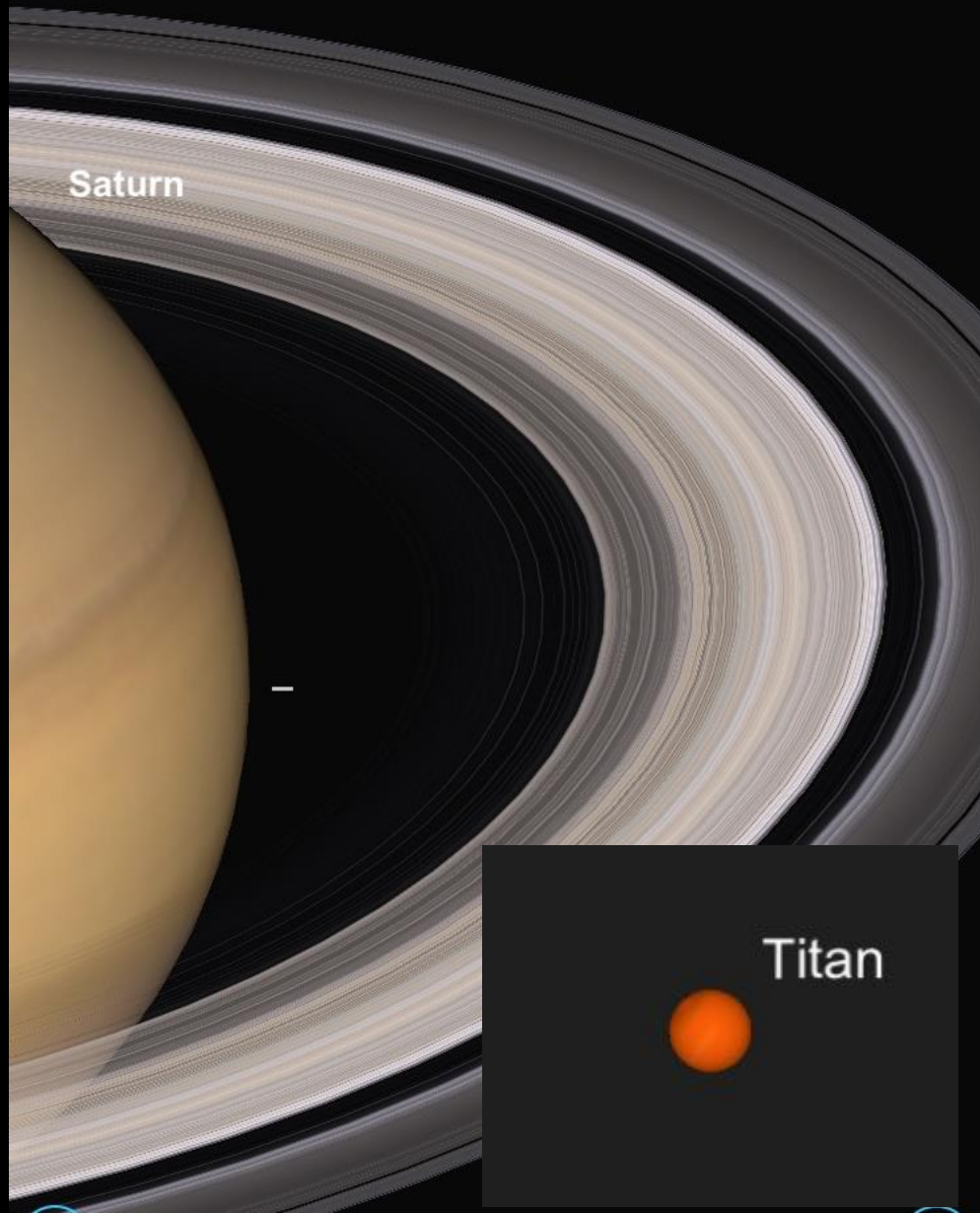
Thu Jun 28, 2018 01:02 AM

S 180° 03' Alt +29° 00'

0.2' x 0.4'

- Jun 27 – Opposition
- Saturn – dia. 18.4 arc-sec
- Rings- 42 arc-sec
- Titan – dia. 0.8 arc-sec

Relative apparent size of
Titan compared to Saturn and
Cassini Division



Current Location

Thu Jun 28, 2018 01:02 AM

S 179° 32' Alt +28° 34'

5.4° x 8.5°

- Jun 28, 2018
- Moon/Saturn Conjunction
- 1:00am
- AZ=179 deg
- EL=28 deg
- Separation = 1.8 deg
- Saturn= +0.0
- M22 to south
- M25 to north



Images from Sky Safari

July - September

M31 Sep 30, 2017

Ballwin MO

Jul–Sep 2018 Conjunctions

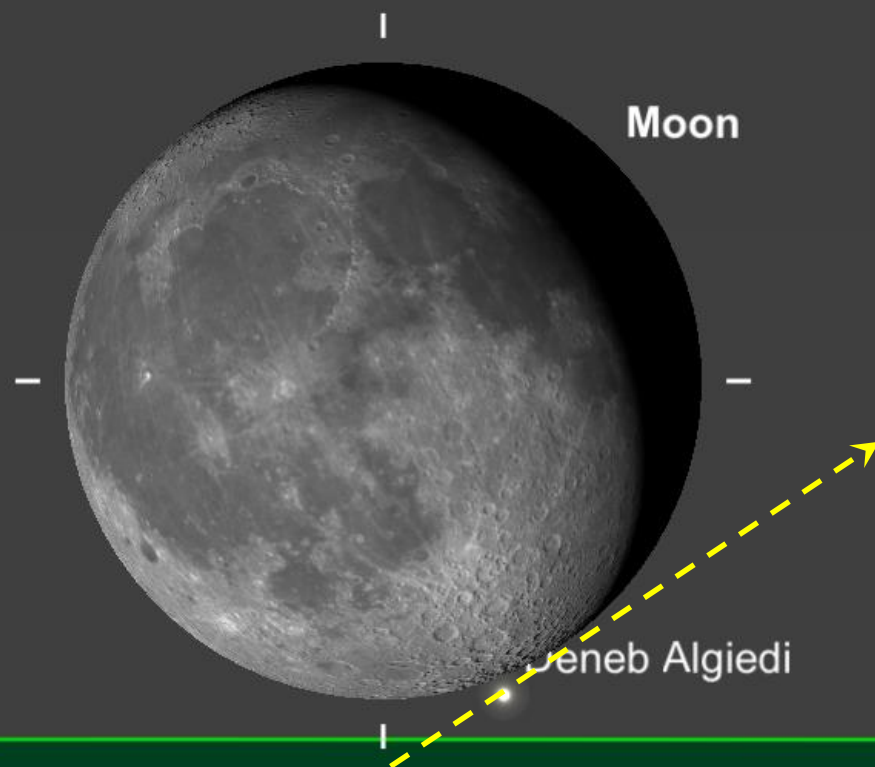
Mon	Day	Time GMT	Event
Jul	4	5:39	Mercury 0.6°S of Beehive
Jul	9	23:34	Venus 0.9°N of Regulus
Jul	10	9:30	Aldebaran 1.1°S of Moon
Jul	14	22:04	Mercury 2.2°S of Moon
Jul	15	16:14	Regulus 1.7°S of Moon
Jul	16	3:31	Venus 1.6°S of Moon
Jul	24	16:49	Mercury 1.2°S of Regulus
Jul	25	6:10	Saturn 2.0°S of Moon
Aug	6	18:35	Aldebaran 1.1°S of Moon
Aug	21	2:09	Mercury 4.8°S of Beehive
Aug	21	9:55	Saturn 2.1°S of Moon
Sep	1	4:45	Venus 1.0°S of Spica
Sep	3	1:34	Aldebaran 1.2°S of Moon
Sep	7	2:13	Beehive 1.4°N of Moon
Sep	17	16:46	Saturn 2.1°S of Moon
Sep	30	7:06	Aldebaran 1.4°S of Moon



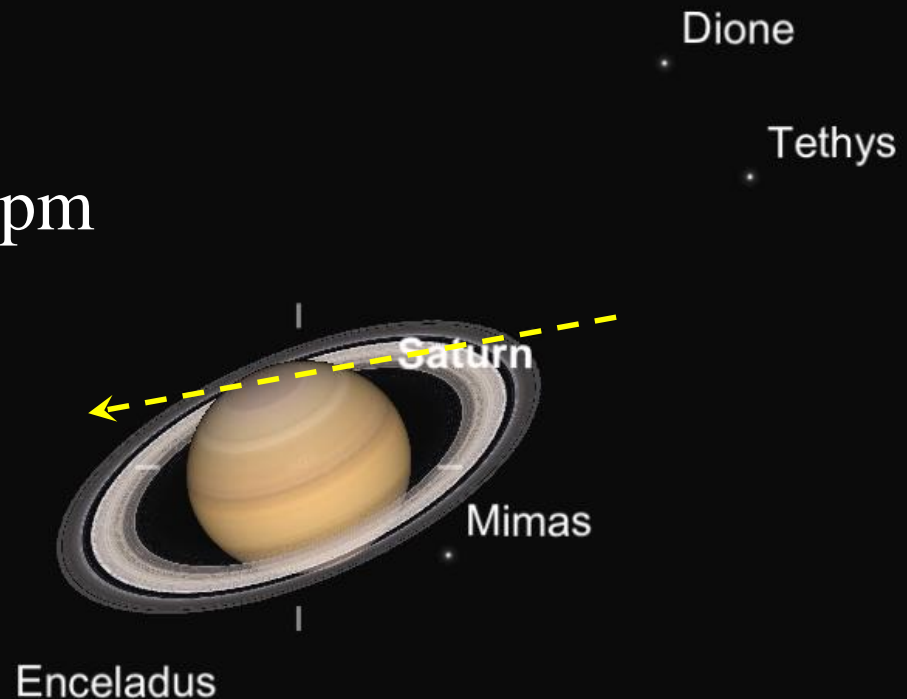
E 110° 10' Alt +00° 14'

0.9° x 1.4°

- Jul 1, 2018
- Moon Occults Star
- Near-graze
- Name: Deneb Algiedi
- Constellation: Delta Cap
- Mag=2.84
- Occult Begins: 11:08pm
- Occult Ends: 11:12pm
- AZ=110 deg
- EL=<1 deg
- **Very near horizon**



- Jul 4, 2018
- Saturn Occults Star
- Name: TYC 6277-00323-1
- Constellation: Sagittarius
- Mag=9.7
- Ring Occult Begins: 11:09pm
- Cassini Occult: 11:32pm
- Ball Occult: 12:10am
- Ball Occult Ends: 1:15am
- Ring Occult Ends: 1:38am
- AZ=182 deg
- EL=28 deg



E 068° 18' Alt +00° 34'

2.0° x 3.2°

- Jul 10, 2018
- Moon/Aldebaran Conjunction
- Mag=6.9 & 5.6
- 3:30am
- AZ=68 deg
- EL=1 deg
- Separation = < 10 arc-min
- Aldebaran mag= +0.99
- **Very near horizon**



W 269° 57' Alt +16° 45'

6.8° x 10.8°

- Jul 15, 2018
- Moon/Venus Conjunction
- 9:06pm
- AZ=269 deg
- EL=16 deg
- Separation = 1.6 deg
- Venus mag= -4.1



Mars 2018

- July 26 - Opposition 24.7 arc-sec (Left)
- July 31 – Closest to Earth (Right)
- Sep 16 Perihelion

Mars Opposition
at SLSC
May 22, 2016

Current Location Fri Jul 27, 2018 01:15 AM
S 180° 04' Alt +25° 53' 0.6' x 0.9'



Current Location Tue Jul 31, 2018 12:54 AM
S 179° 58' Alt +25° 33' 0.6' x 0.9'



Images from Sky Safari

Mars Oppositions 1999-2003



MAY 28 1999



JUN 24 2001



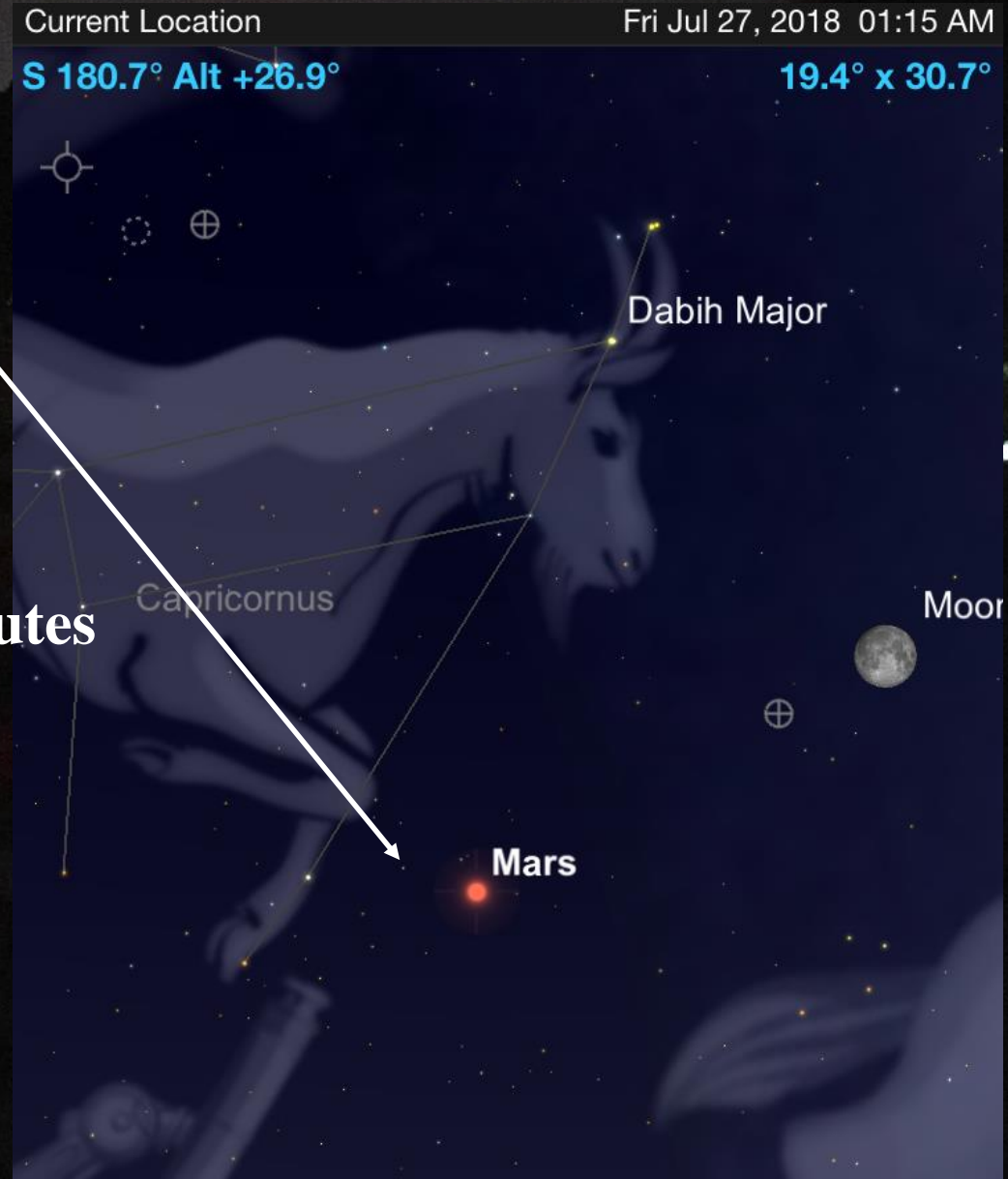
SEP 6 2003
SEP 8 2003



Mars 2018

- **July 26 – Opposition**
- **Full Moon nearby**
- **Mars on meridian**

- **Mars mag= -2.8**
- **Dia = 24.3 arc-sec**
- **Distance 3.2 light-minutes**



Mars Oppositions

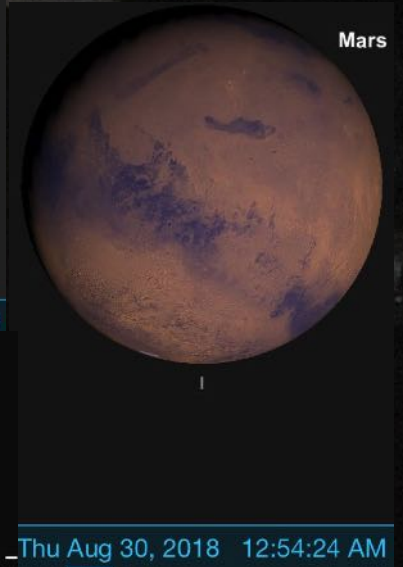
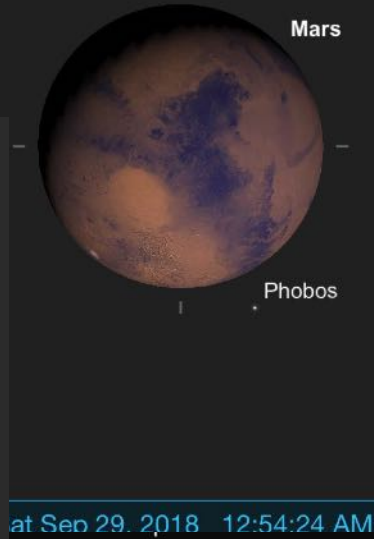
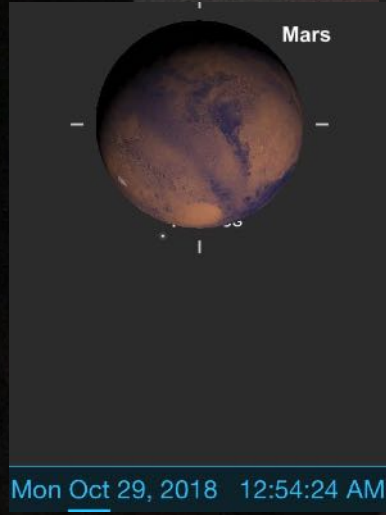
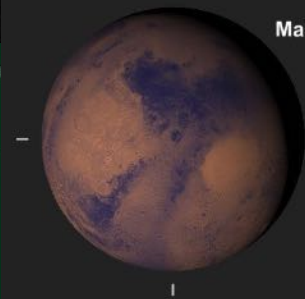
	Mars Distance in Millions of Miles	Diameter in arc-seconds
Aug 23 1924	34.86	25.1
Sep 10 1956	35.42	24.7
Aug 10 1971	35.15	24.9
Sep 28 1988	37.03	23.7
Aug 28 2003	34.85	25.1
Jul 26 2018	36.10	24.3
Oct 13 2020	39.13	22.4
Dec 7 2022	51.27	17.1
Jan 15 2025	60.13	14.6
Feb 19 2027	63.39	13.8
Mar 25 2029	60.69	14.4
May 4 2031	52.28	16.8
June 27 2033	40.02	21.9
Sep 15 2035	35.66	24.6

•Next minimum distance of Oct 2020

•Next time this close 2035

Mars 2018

- **May – Oct 2018**
- **~ 4 months to repeat central meridian**



Wed May 02, 2018 12:54

Fri Jun 01, 2018 12:54:24

Sun Jul 01, 2018 12:54:24

Tue Jul 31, 2018 12:54:08 AM

Mon Oct 29, 2018 12:54:24 AM

at Sep 29, 2018 12:54:24 AM

Thu Aug 30, 2018 12:54:24 AM



Full Moon Events 2018

Smallest

Jun 27 – Second smallest of FM 2018

Jul 27 – Smallest of FM 2018 (29.41 arc-min)

Largest

Jan 1 – Largest FM of 2018 (33.16 arc-min)

Jan 31 – Second largest FM of 2018



Apogee Moon
Jan 15, 2014
406,532 km



Perigee Moon
Nov 13, 2016
350,853 km

Canon DSLR FL=300mm

Jan 1, 2018 - 3rd largest of the last 10 years. The biggest of the next 10 years. Former larger FM was Nov 14, 2016. Next larger FM is Nov 25, 2034

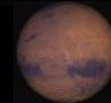
Planet Oppositions 2018

- **Venus GEE – Aug 17 (24.5 arc-sec)**
- Mars – July 27 (dia=24.3 arc-sec)
- Jupiter – May 9 (dia=45 arc-sec)
- Saturn – June 27 (dia=18.3 arc-sec, 25.6° rin
- Uranus – Oct 24 (dia=3.7 arc-sec)
- Neptune – Sep 7 (dia=2.32 arc-sec)

Top to Bottom:
Relative sizes of



Venus



Mars



Jupiter



Saturn

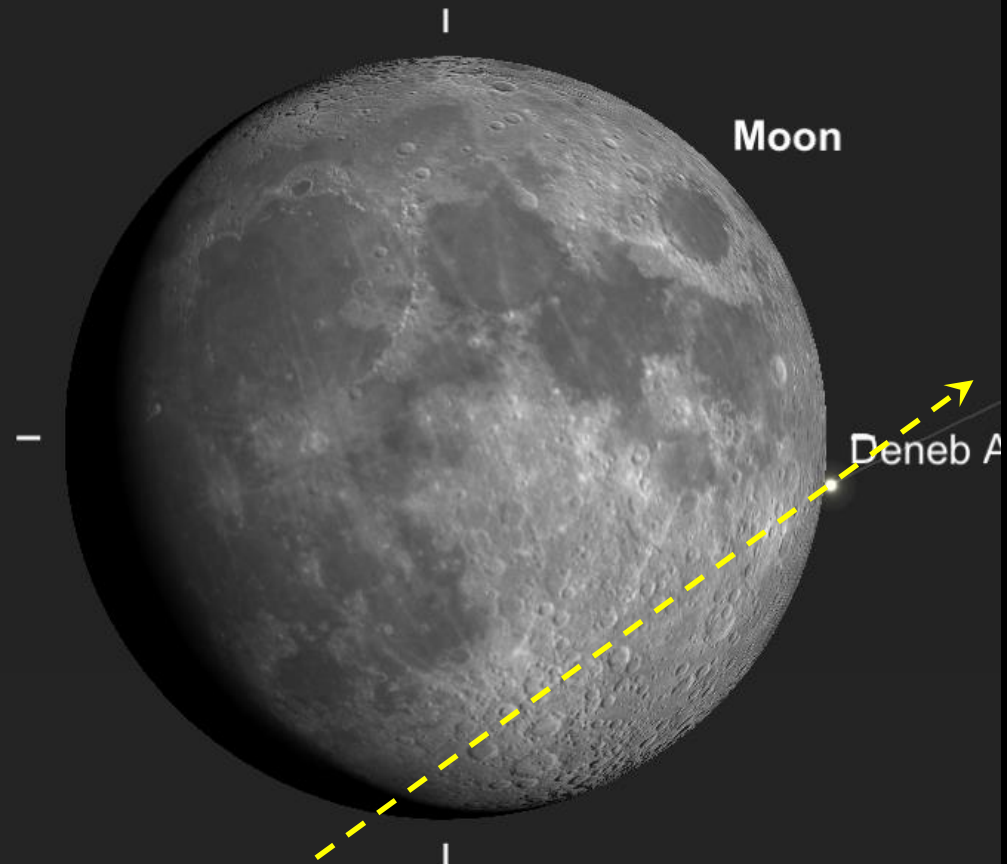


Uranus



Neptune

- Sep 21, 2018
- Moon Occults Star
- Name: Deneb Algiedi
- Constellation: Delta Cap
- Mag=2.84
- Occult Begins: 5:50pm
- Occult Ends: 6:43pm
- AZ=121 deg
- EL=11 deg



October - December

M57 Sep 30, 2017

Ballwin MO

Oct–Dec 2018 Conjunctions

Mon	Day	Time GMT	Event
Oct	4	9:51	Beehive 1.3°N of Moon
Oct	5	21:58	Regulus 1.8°S of Moon
Oct	16	3	Mercury 6.2° of Venus
Oct	18	13:01	Mars 1.9°S of Moon
Oct	27	13:04	Aldebaran 1.6°S of Moon
Oct	29	6	Mercury 3.1° of Jupiter
Oct	31	15:24	Beehive 1.0°N of Moon
Nov	2	4:16	Regulus 2.1°S of Moon
Nov	9	4:58	Mercury 1.8°N of Antares
Nov	11	15:46	Saturn 1.4°S of Moon
Nov	14	23:14	Venus 0.2°S of Spica
Nov	16	4:16	Mars 1.0°N of Moon: Occn.
Nov	23	21:11	Aldebaran 1.7°S of Moon
Nov	27	20:57	Beehive 0.8°N of Moon
Nov	29	9:27	Regulus 2.3°S of Moon
Dec	5	21:06	Mercury 1.9°S of Moon
Dec	9	5:30	Saturn 1.1°S of Moon: Occn.
Dec	21	7:31	Aldebaran 1.7°S of Moon
Dec	21	20	Mercury 0.8° of Jupiter
Dec	22	8:05	Mercury 5.8°N of Antares
Dec	22	15:03	Jupiter 5.1°N of Antares
Dec	25	4:52	Beehive 0.6°N of Moon
Dec	26	16:06	Regulus 2.5°S of Moon

SE 116° 27' Alt +54° 58'

4.2° x 6.7°

- Oct 4, 2018
- Moon Occults Star
- Asellus Australis
- Name: Delta Cancri
- Mag=3.93 & 12.2
- Occult Begins: 5:41am
- Occult Ends: 6:54am
- AZ=102 deg
- EL=43 deg
- M44 1.2 deg to north

Asellus Borealis



Cancer



Asellus Australis

Moon

- Oct 4, 2018
- Moon Conjunction Hyades Cluster
- Constellation: Cancer
- 3:50am
- AZ=83 deg
- EL=22 deg
- Separation = 1.2 deg

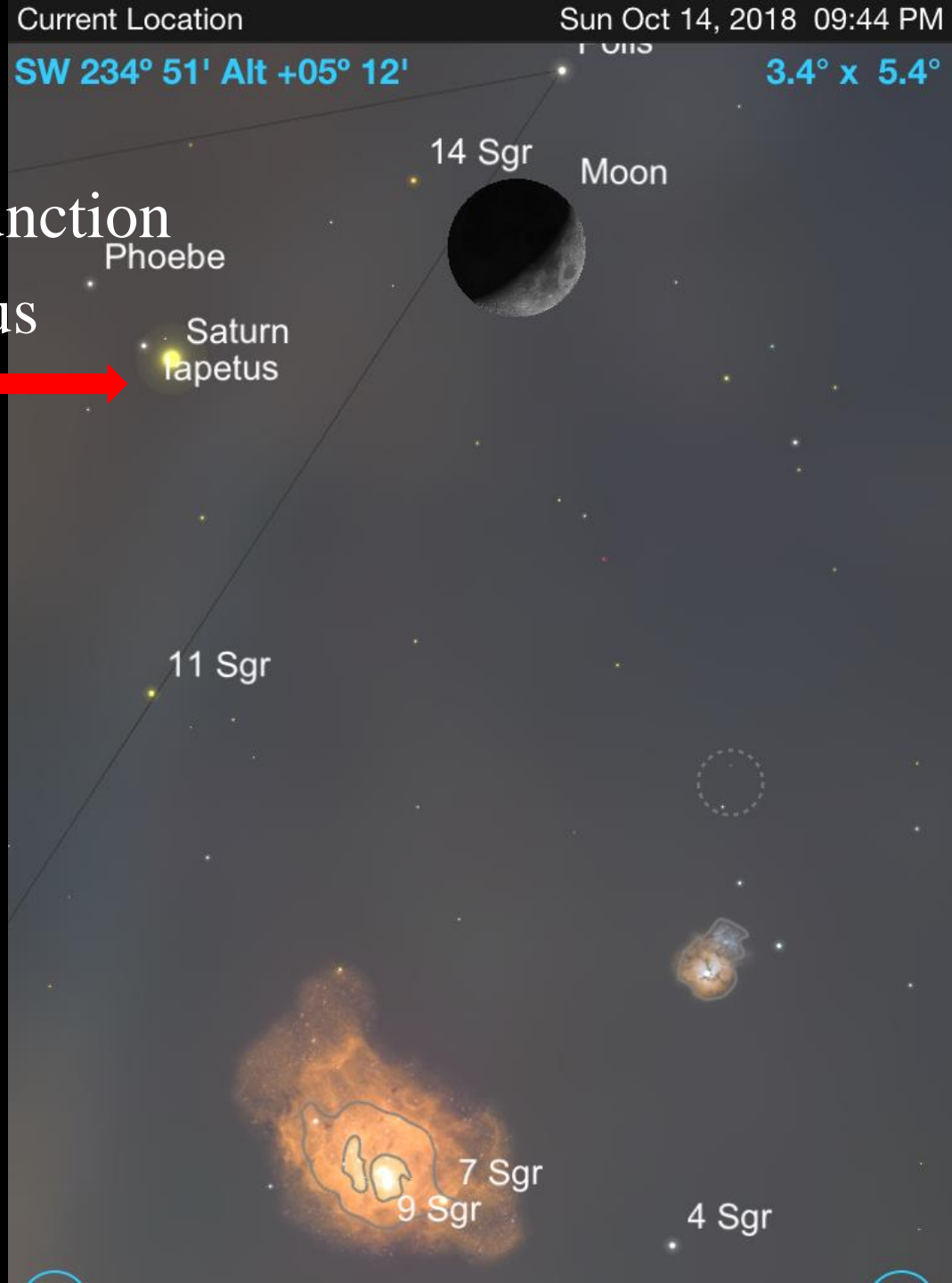


- Oct 14, 2018
- Moon/Saturn/M8 Conjunction
- Constellation: Sagittarius
- 9:44pm
- AZ=234 deg
- EL=5 deg
- Separation = 1.8 deg

- Saturn mag= +0.5
- M8 mag= +6.0

- **Very near horizon**

Images from Sky Safari



Mars/Antares/Saturn/Moon Conjunction

Sep 27, 2014



Venus 2018

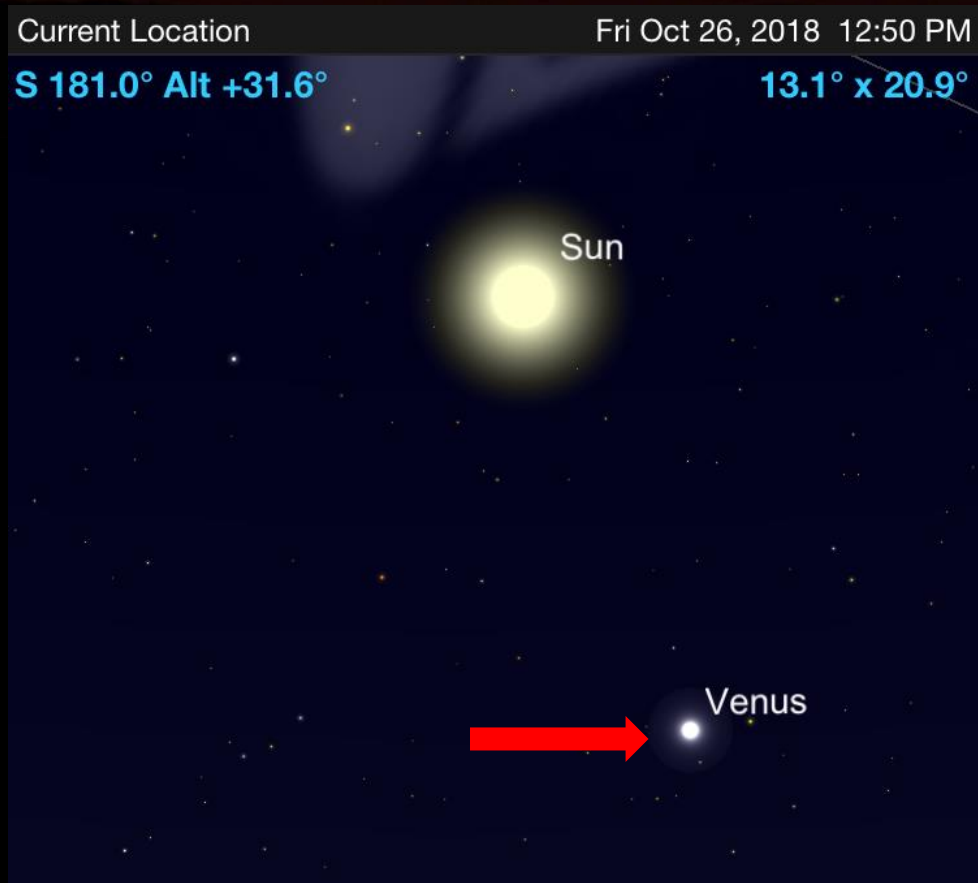
- Evening to Morning Star!

Oct 26 - Venus Conjunction (inferior)

Separation = 6° south of Sun.

Mag= -4.3

Dia =61.3 arc-sec



Uranus/Neptune 2018

Current Location Tue Oct 23, 2018 12:50 AM

S 180° 22' Alt +62° 31'

1.0' x 1.6'

Oberon

- Uranus

- Oct 24 – Opposition (Pisces)

- 18.9AU
- 156 light-minutes
- +5.7mag
- 3.7 arc-sec

- Neptune

- Sep 7 – Opposition (Aquarius)

- 28.9AU
- 240 light-minutes
- +7.8mag
- 2.32 arc-sec



Current Location Fri Sep 27, 2018 12:52 AM

S 103° 38' Alt -43° 15'

0.4' x 0.7'

Triton



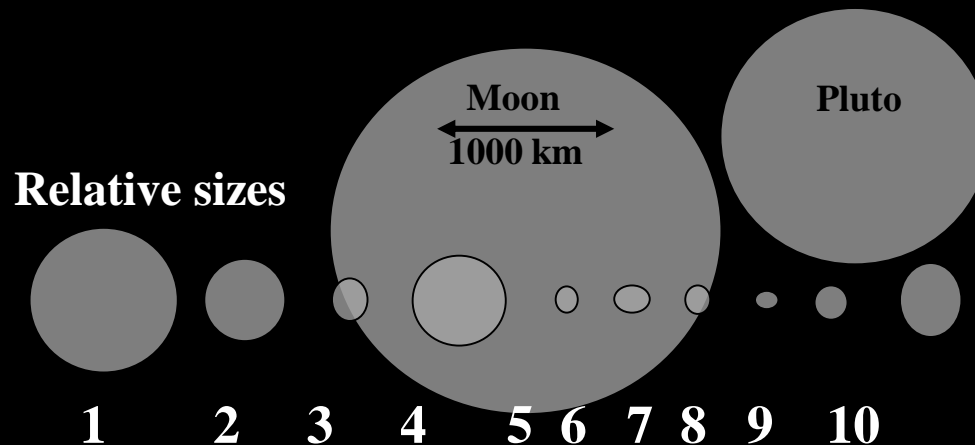
Position of Uranus' and Neptune's moons at opposition

- Nov 15, 2018
- Moon/Mars Conjunction
- 11:40pm
- AZ=251 deg
- EL=1 deg
- Separation = 1.0 deg
- Mars mag= -0.3
- **Very near horizon**



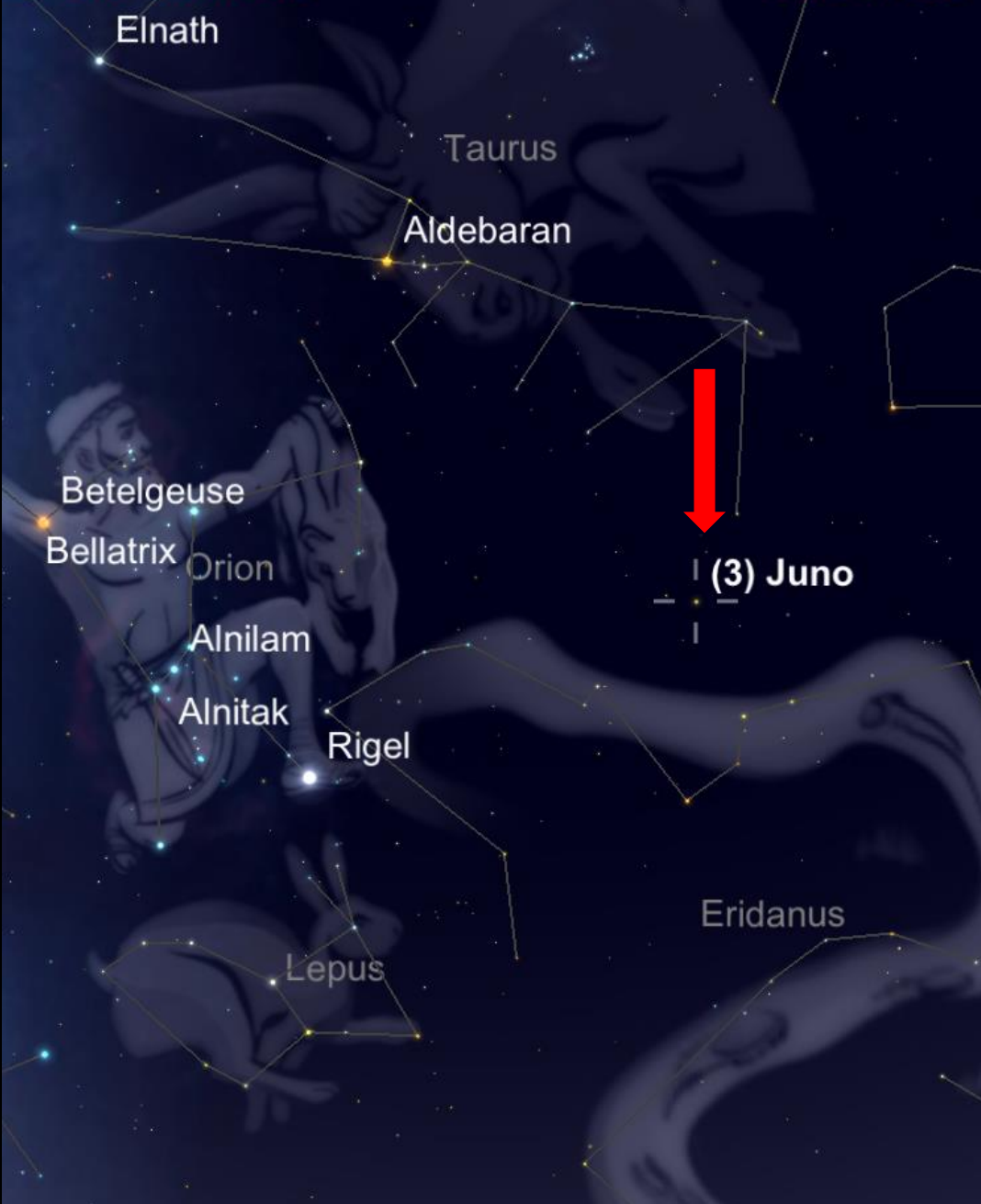
Small Body Oppositions 2018

Jan	31	Dwarf Planet Ceres (1) at opposition, mag 6.9 (2018)
Oct	29	Asteroid Pallas (2) at opposition, mag 8.2 (2017)
Nov	17	Asteroid Juno (3) at opposition, mag 7.4
Jun	19	Asteroid Vesta (4) at opposition, mag 5.3
Dec	28	Asteroid Hebe (6) at opposition, mag 8.4
Oct	30	Asteroid Iris (7) at opposition, mag 6.9 (2017)
Jan	2	Asteroid Flora (8) at opposition, mag 8.2 (2018)
Jan	16	Asteroid Metis (9) at opposition, mag 9.7
Sep	23	Asteroid Hygiea (10) at opposition, mag 10.1
Jul	12	Dwarf Planet Pluto (134340) at opposition, mag 14.2



S 164.5° Alt +42.0°

50.3° x 78.2°



Asteroid Juno (3) at opposition,
Nov 17 2018

mag: 7.5

dist=155 mKm

dia=0.3 arc-sec

Constellation: Eridanus

Yellow=Favorable Conditions

W 252° 17' Alt +09° 53'

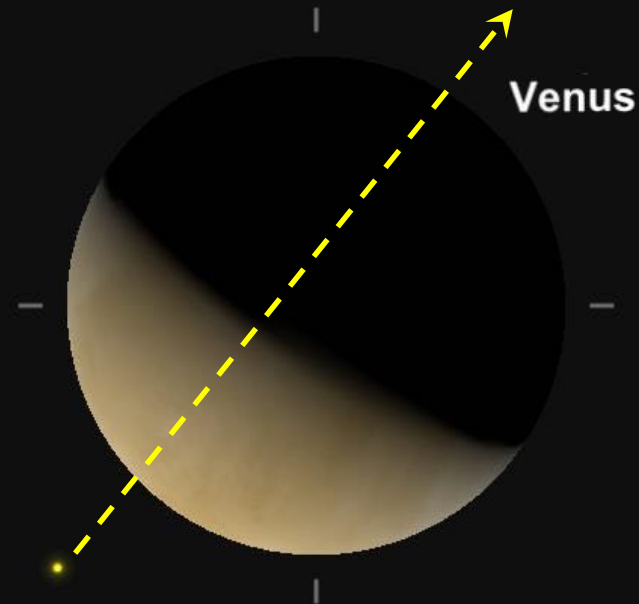
21.7' x 34.0'

- Dec 6, 2018
- Mars/Neptune Conjunction
- 10:40pm
- AZ=252 deg
- EL=9 deg
- Separation = 0.04 deg!!

- Mars mag= +0.1
- Neptune mag=+7.9



- Dec 21, 2018
- Venus Occults Star
- HR 5518, Mag=6.32
- Constellation: Libra
- Occult Begins: 5:52am
- Occult Ends: 6:07am
- AZ=131 deg
- EL=23.5 deg



SLAS Dark Sky Parties for 2018

Mar	10	Dark Sky Party (sunset=6:10pm)
Apr	14	Dark Sky Party (sunset=7:43pm)
May	12	Dark Sky Party (sunset=8:11pm)
Jun	16	Dark Sky Party (sunset=8:27pm)
Jul	14	Dark Sky Party (sunset=8:28pm)
Aug	11	Dark Sky Party (sunset=8:03pm)
Sep	8	Dark Sky Party (sunset=7:24pm)
Oct	6	Dark Sky Party (sunset=6:39pm)
Nov	3	Dark Sky Party (sunset=6:02pm)