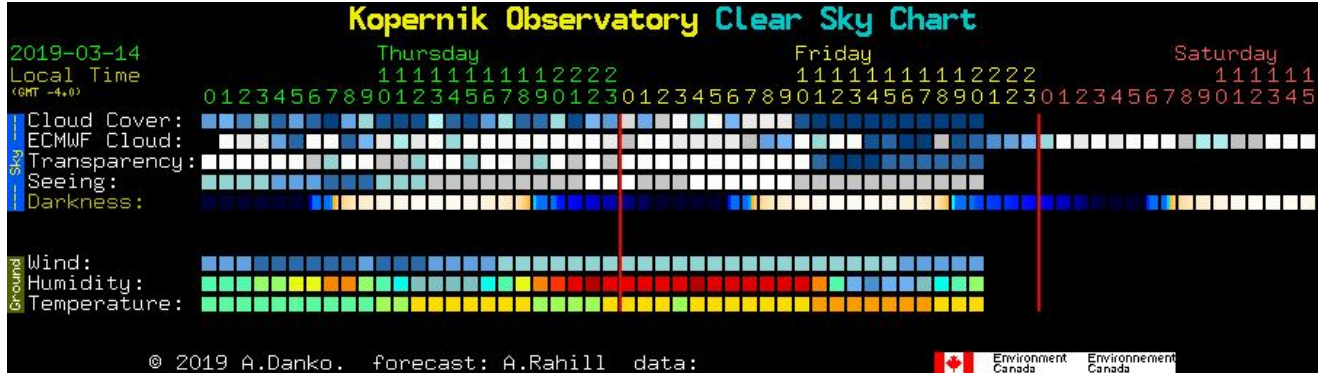




# KAS Observation Planning

Date: 15 March 2019 20:00 EST

## Weather



| Time  | Conditions    | Temp. | Feels Like | Precip.   | Cloud Cover | Dew Point | Humidity | Wind       | Pressure |
|-------|---------------|-------|------------|-----------|-------------|-----------|----------|------------|----------|
| 18:00 | Partly Cloudy | 59 °F | 57 °F      | <u>1%</u> | <u>0 in</u> | 39 °F     | 53%      | 10 mph WSW | 29.70 in |
| 19:00 | Mostly Cloudy | 56 °F | 53 °F      | <u>1%</u> | <u>0 in</u> | 38 °F     | 60%      | 10 mph W   | 29.72 in |
| 20:00 | Partly Cloudy | 53 °F | 50 °F      | <u>1%</u> | <u>0 in</u> | 37 °F     | 59%      | 9 mph W    | 29.75 in |
| 21:00 | Mostly Cloudy | 50 °F | 47 °F      | <u>5%</u> | <u>0 in</u> | 37 °F     | 60%      | 10 mph W   | 29.77 in |
| 22:00 | Partly Cloudy | 48 °F | 44 °F      | <u>4%</u> | <u>0 in</u> | 36 °F     | 46%      | 10 mph W   | 29.79 in |

## Space News

- **This day is history:** <http://www.astronautix.com/m/march15.html>
  - **1960 March 15 - Saturn I transferred to NASA.** The Army Ballistic Missile Agency's Development Operations Division and the Saturn program were transferred to NASA after the expiration of the 60-day limit for congressional action on the President's proposal of January 14. (The President's decision had been made on October 21, 1959.) By Executive Order, the President named the facilities the "George C. Marshall Space Flight Center." Formal transfer took place on July 1.
  - **1781 March 13** – Sir William Herschel discovered Uranus, the seventh planet from the sun.
- **Budget proposal, ISS partners provide new momentum for lunar Gateway from Spacenews.com — March 12, 2019**
  - The fiscal year 2020 budget request, released March 11, seeks \$821 million for continued work on the lunar Gateway, a project previously known as the Lunar Orbital Platform-Gateway and the Deep Space Gateway. Congress allocated \$450 million for the program, which it called the Lunar Orbital Platform, in the final fiscal year 2019 appropriations bill signed into law Feb. 15.



# KAS Observation Planning

Date: 15 March 2019 20:00 EST

## ➤ EXPEDITION 59 to the ISS

- Two American astronauts and a Russian cosmonaut are set to join the crew aboard the International Space Station on Thursday, March 14. The trio's arrival will return the orbiting laboratory's population to six, including three NASA astronauts. This launch will also mark the fourth Expedition crew with two female astronauts. Live coverage will air on NASA Television and the agency's [website](#). NASA astronauts [Nick Hague](#) and [Christina Koch](#), and cosmonaut [Alexey Ovchinin](#) of Roscosmos, are set to launch aboard the Soyuz MS-12 spacecraft at 3:14 p.m. EDT (12:14 a.m. March 15 Kazakhstan time) from the Baikonur Cosmodrome in Kazakhstan on a six-hour journey to the station

## Spacecraft

**ISS Visible pass** – None on the evening of the 8th of March.

| Date                   | Brightness<br>(mag) | Start    |      |     | Highest point |      |     | End      |      |     | Pass type |
|------------------------|---------------------|----------|------|-----|---------------|------|-----|----------|------|-----|-----------|
|                        |                     | Time     | Alt. | Az. | Time          | Alt. | Az. | Time     | Alt. | Az. |           |
| <a href="#">16 Mar</a> | -3.0                | 06:02:21 | 29°  | WSW | 06:03:02      | 33°  | SW  | 06:06:01 | 10°  | SSE | visible   |
| <a href="#">17 Mar</a> | -1.7                | 05:14:09 | 20°  | SE  | 05:14:09      | 20°  | SE  | 05:15:20 | 10°  | SE  | visible   |
| <a href="#">20 Mar</a> | -2.6                | 20:52:57 | 10°  | SSW | 20:55:00      | 30°  | S   | 20:55:00 | 30°  | S   | visible   |
| <a href="#">21 Mar</a> | -2.5                | 20:02:27 | 10°  | S   | 20:05:08      | 23°  | SE  | 20:06:59 | 15°  | E   | visible   |
| <a href="#">21 Mar</a> | -1.4                | 21:38:21 | 10°  | WSW | 21:39:47      | 22°  | W   | 21:39:47 | 22°  | W   | visible   |
| <a href="#">22 Mar</a> | -3.7                | 20:47:06 | 10°  | WSW | 20:50:23      | 76°  | NNW | 20:51:32 | 37°  | NE  | visible   |
| <a href="#">23 Mar</a> | -3.7                | 19:56:03 | 10°  | SW  | 19:59:17      | 59°  | SE  | 20:02:32 | 10°  | ENE | visible   |
| <a href="#">23 Mar</a> | -1.7                | 21:33:14 | 10°  | W   | 21:35:50      | 25°  | NNW | 21:35:50 | 25°  | NNW | visible   |

**Iridium Flare** – None on the evening of the 15th of March



# KAS Observation Planning

Date: 15 March 2019 20:00 EST

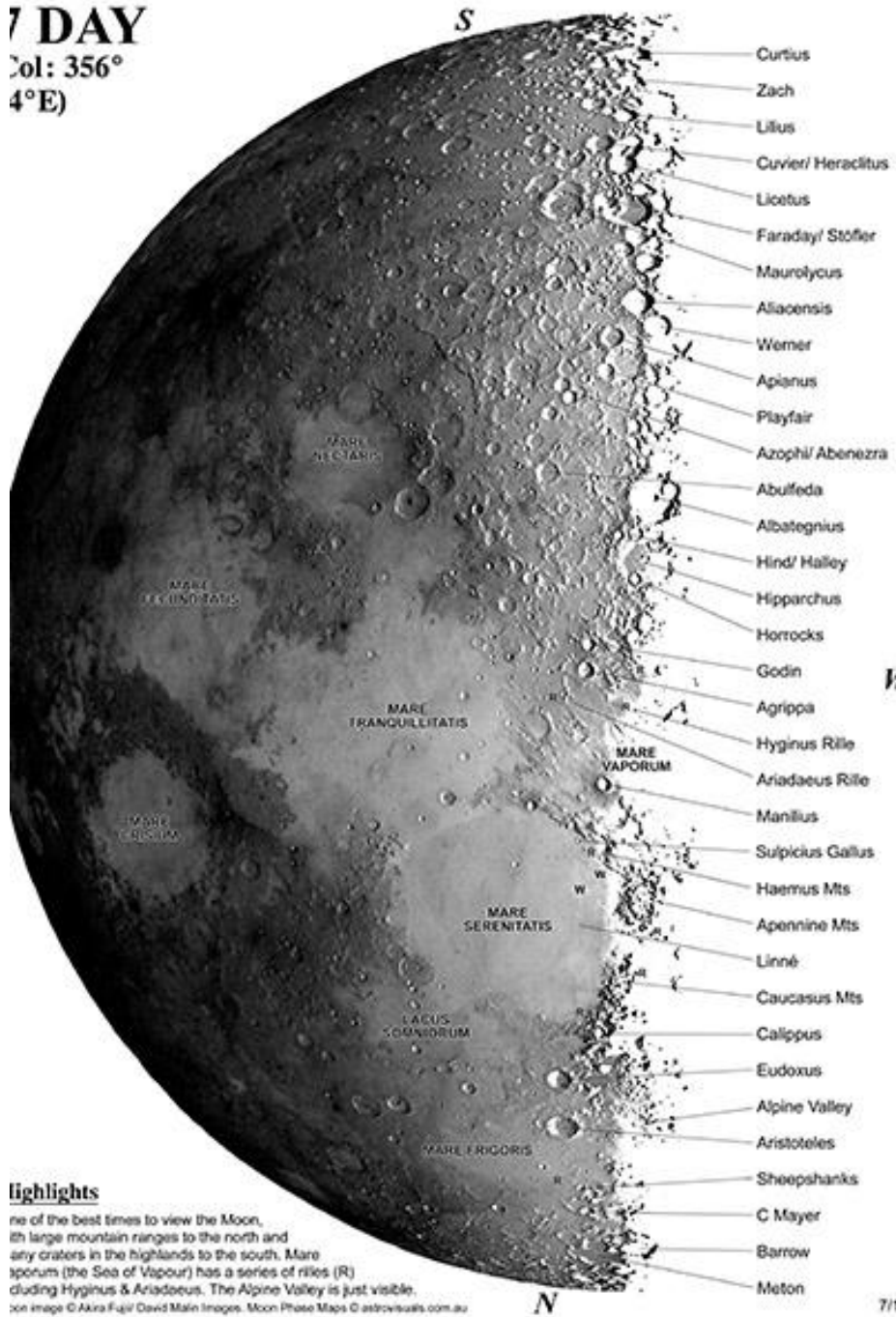
## Solar System

**Sun** – set: 19:10 Civil twilight: 19:38 **Astronomical twilight ends: 20:44** (Spring equinox: 20 March 2019)

**Mars** – Becoming visible at around 19:51 as the dusk sky fades, 42° above the western horizon. It will then sink towards the horizon, setting 4 hours and 43 minutes after the Sun at 23:51.

**Moon** – Waxing Gibbous Age: 7- days Set: 03:20 Illumination of disk: 57%

**7 DAY**  
Sol: 356°  
4°E



### Highlights

One of the best times to view the Moon, with large mountain ranges to the north and many craters in the highlands to the south. Mare Vaporum (the Sea of Vapour) has a series of rilles (R) including Hyginus & Ariadaeus. The Alpine Valley is just visible.

moon image © Akira Fujii/ David Malin Images. Moon Photo Maps © astrovisualse.com.au



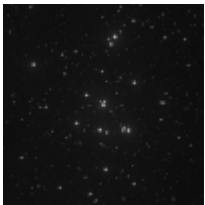
# KAS Observation Planning

Date: 15 March 2019 20:00 EST

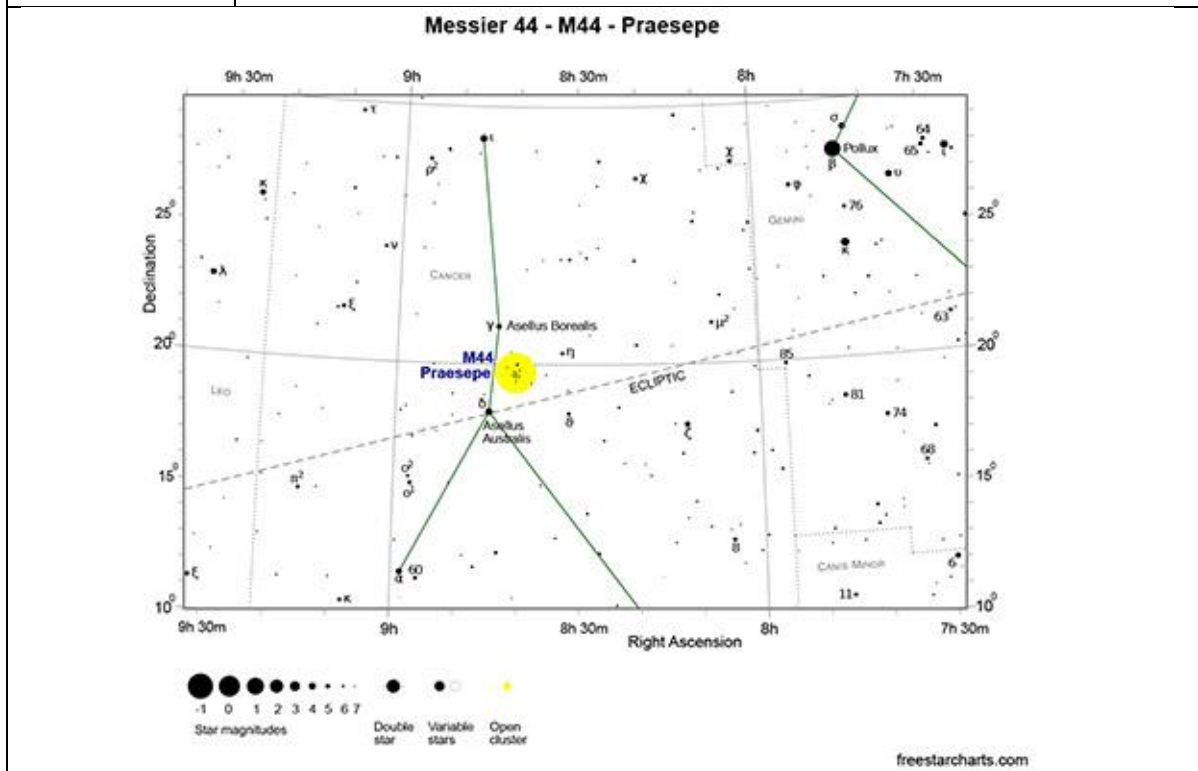
## Deep Space



**M45 Pleiades** (mag 1.3) will become visible at around 19:50 as the dusk sky fades,  $55^\circ$  above the western horizon. It will then sink towards the horizon, setting 5 hours and 58 minutes after the Sun at 01:05.



**M44 Beehive Cluster** (mag 3.1) becoming accessible at around 20:10 as the dusk sky fades,  $54^\circ$  above the south-eastern horizon. It will then reach its highest point in the sky at 22:14,  $67^\circ$  above the southern horizon



**M31 Andromeda Galaxy** (mag 3.4) becoming visible at around 20:13 as the dusk sky fades,  $27^\circ$  above the north-western horizon. It will then sink towards the horizon, setting 4 hours and 47 minutes after the Sun at 23:54.



**M42 Orion Nebula** will become visible at around 19:50 as the dusk sky fades,  $40^\circ$  above your southern horizon. It will then sink towards the horizon, setting 5 hours and 50 minutes after the Sun at 00:57.