**Night Sky 2018 - February**

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| **Moon Phases** | **Sunrise** | **Sunset** | **Venus Sets** |
| Last Quarter – 7th  New Moon – 15th  First Quarter – 23rd  Full Moon – (No FM) | 1st – 7:48am  10th – 7:33am  20th – 7:14am  28th – 6:58am | 1st – 5:02pm  10th – 5:18pm  20th – 5:36pm  28th – 5:50pm | 1st – 5:21pm  10th – 5:50pm  20th – 6:22pm  28th – 6:48pm |
| **Moon Rise (New-Full)** | **Moon Set (Full-New)** | **Moon Rise (Full-New)** | **Moon Set(Full-New)** |
| 16th – 7:48am  17th – 8:14am  18th – 8:38am  19th – 9:01am  20th – 9:24am  21st – 9:50am  22nd – 10:19am  23rd – 10:54am **(FQ)**  24th – 11:36am  25th – 12:28pm  26th – 1:30pm  27th – 2:41pm  28th – 3:58pm | 16th – 6:12pm  17th – 7:20pm  18th – 8:29pm  19th – 9:39pm  20th – 10:50pm  21st – **(No MS)**  22nd – 12:03am  23rd – 1:16am **(FQ)**  24th – 2:28am  25th – 3:36am  26th – 4:38am  27th – 5:31am  28th – 6:14am | 1st – 6:27pm  2nd – 7:46pm  3rd – 9:03pm  4th – 10:16pm  5th – 11:27pm  6th - **(No MR)**  7th – 12:34am **(LQ)**  8th – 1:40am  9th – 2:43am  10th – 3:42am  11th – 4:37am  12th – 5:26am  13th – 6:10am  14th – 6:47am  15th – 7:20am **(New)** | 1st – 8:22am  2nd – 8:55am  3rd – 9:24am  4th – 9:49am  5th – 10:13am  6th – 10:37am  7th – 11:03am **(LQ)**  8th – 11:30am  9th – 12:02pm  10th – 12:38pm  11th – 1:20pm  12th – 2:09pm  13th – 3:04pm  14th – 4:03pm  15th – 5:06pm **(New)** |
| A useful site: [www.heavens-above.com](http://www.heavens-above.com/) | A S Zielonka |  |  |

There is a planned launch\* this month from **Vandenberg Air Force Base, California** of a **SpaceX Falcon 9** rocket. It will launch the **Paz**satellite for **Madrid-based** operator **Hisdesat**, becoming **Spain’s** first radar observation satellite as part of the **National Earth Observation Program (NEOP)**. The satellite is completing a multi-purpose mission, collecting radar imagery for application in national security and defence, civilian applications, science and commercial exploitation. The 1,200-Kilogram satellite carries an **X-Band Synthetic Aperture Radar** capable of delivering imagery at a ground resolution of one meter, capturing around 200 scenes per day. **Paz**was originally planned to fly on a **Dnepr** booster, but as the vehicle fell victim to the political conflict between the **Ukraine** and **Russia** the mission was moved to a **SpaceX Falcon 9** after encountering nearly three years of delays.

There is a scheduled launch on the **1st**\* at around **2:00am**\* from **Vostochny Cosmodrome, Oblast Amur, Russia**. It will launch the **Kanopus-V No. 3**and **4 Earth Observation Satellites** into a **Sun Synchronous Orbit. Kanopus** represents a constellation of small remote sensing spacecraft, operating alongside the large **Resurs** satellites that build Russia’s primary civilian**Earth** observation system, however, both **Resurs** and **Kanopus** have some overlap with the military. The **Kanopus Satellites** host three imaging payloads to capture high-resolution panchromatic images, multi-spectral and hyperspectral data. This will be the third launch from **Vostochny** after the facility opened for business in 2016.

On the **1st** and **2nd**the asteroid **8 flora** **(9.2 magnitude)** is near the **2.87** magnitude star Mu **Geminorum** in the constellation of **Gemini**. For further information please see **'Asteroids'** and **'Constellations'**in the website above.

From the **1st - 4th** the asteroid **Vesta** **(7.7 magnitude)** will be in the constellation of **Ophiuchus** passing near to the **4.29 magnitude** star **Phi Ophiuchi**. For further information please see **'Asteroids'**and **'Constellations'** in the above website.

As the**Moon** rises in the **ENE** on the evening of the **1st** at **6:45pm**it will be **less than a degree** from the bright star **Regulus** in the constellation of **Leo**. An **Occultation of Regulus** by the **Moon** occurs this day which will be visible over most **North Europe** and **North Asia** (and unfortunately just misses the **UK**.

There is a scheduled launch around **5:00am**\* on the **3rd**\* from the **Uchinoura Space Center, Japan** of the **TRICOM-1R (3U CubeSat)**. The smallest Orbital Launch Vehicle ever flown is aiming for a re-flight mission after an initial launch attempt failed in January 2017 due to a design flaw on the beefed up sounding rocket that explores the feasibility of launch vehicle capable of placing individual**CubeSats**into orbit. The three-stage **SS-520-4** was developed by **JAXA** to act as a pathfinder for a future **Small Satellite Launch Vehicle**, conducting a data-gathering exercise to validate the approach of using low-cost sounding rocket technology and simplified launch procedures for a future operational vehicle capable of placing small satellites into orbit.

**Comet 62P Tsuchinshan**will be in the constellation of **Virgo** all month. It was at **12 magnitude on 11th Dec**. On the **6th** at **6:00am** its approximately **9 degrees** upper left of the **Moon**.It will be at its closest to earth **mid-March** at a distance of **1.025AU**. (An error on my part in last months notes put it at its closest to **Earth** for **mid-February**)

At **6:00am** on the **7th** the **Moon** will be due south with **Jupiter**, **10 degrees** to the lower left of it.

On the **8th** at **6:00am Jupiter** will be **6 degrees** to the lower right of the **Moon**. **Mars** also will be **14 degrees** to the lower left of the**Moon**. At the same time **Saturn** is just 5 degrees above the horizon, due south east.

An **Occultation** of the asteroid **Vesta** by the **Moon**occurs on the **9th**. This will only be seen from  **Antartica**.

At **6:00am** on the **9th**, **Mars** will be just **4 degrees** to the lower right of the crescent **Moon**.

**Mars**will be **14 degrees** to the right of the crescent **Moon** on the **10th**between **6:30 – 6:45am.**

**Saturn** will be just **4 degrees** to the lower left of the thin crescent **Moon** on the morning of the **11th** at **6:30am**.

There is a planned launch on the **11th**\* from the**Baikonur Cosmodrome**, **Kazakhstan**of the **Russian Soyuz 2-1A** rocket. It will launch the Progress **MS-08** cargo spacecraft into orbit for a supplies delivery to the **International Space Station (ISS)**. Carrying around 2,500kg of cargo, **Progress MS-08** is the 161st overall mission of the Russian cargo vehicle since its first flight in 1978 and the 71st to the **ISS**; it is the first of three planned Progress flights of 2018. The mission is a good candidate to demonstrate Russia’s new two-orbit rendezvous technique that offers a faster transit time for crews and cargo from their remote **Kazakhstan** launch pads to their destination in space.

On the **12th** at **6:30am** the thin crescent **Moon** will be due **south east**, with **Saturn** **9½ degrees** to the above right of it.

At **6:35am** on the **13th**a very thin crescent **Moon** will be just **2 degrees**above the **ESE** horizon.

There is a **Partial Eclipse of the Sun** on the **15th**. This will only be visible from the**Antarctic** and the southern half of **South America**.

**Comet185P Petriew** will be travelling from the constellation of **Pisces** into **Cetus** and back into **Pisces** during this month. From the **15th - 19th** it will be **1.328AU** from the **Earth**. This is unlikely to seen as its a very faint object.

On the evening of the **16th** between **5:50 – 6:00pm** you may be lucky to see a very thin crescent **Moon** with **Venus** just **1 degree** to the upper right of it and only **2 – 3 degrees** above the **WSW** horizon. Today **Venus** will set **40 minutes** after the **Sun**. An **Occultation of Venus** by the **Moon** occurs and will only be visible from the southern half of **South America** and the south and south west of Africa.

**Mercury**is at superior conjunction with the **Sun** on the **17th**.

On the **17th** at **6:00pm** the thin crescent **Moon** will be in the **WSW** direction with **Venus** **11 degrees** to the lower right of it and just **2 degrees** above the horizon. **Neptune**lies midway between them and just offset centre to the right, though unlikely to be seen.

Between **9:00 – 9:30pm** on the **19th**, **Uranus** will be **11 degrees** directly above the slowly setting crescent **Moon**.

On the night of the **19th** at **12:30am** **Comet185P Petriew**will be less than **½ a degree** from the **Moon**. This is a very faint object and not likely to be seen.

On the **20th** at **7:00pm**, **Uranus** will be **7 degrees** to the right of the **Moon**.

During the evenings this month the asteroid **Ceres (7.2 magnitude)**is in the constellation of **Cancer**. From the **20th - 28th** it will be **4 degrees** from the **4th magnitude** star **Iota Cancri** **(in Cancer)** and **14 degrees** to the upper left of the bright star **Pollux** in **Gemini**. (For further information please see **'Asteroids'**and **'Constellations'** in the website above.

**Comet C/2017 T1 Heinze**will be in the constellation of **Pegasus** this month. It will reach perihelion on the **21st** when it will be just **0.581AU**distance from the **Sun**. Its last observable magnitude was**9.5.**

Between **6:00 – 7:00pm** on the **22nd**, the star cluster **Pleiades**will be **12 degrees**above the **Moon**.

**Comet C/2016 R2 Panstarrs** will be in the constellation of **Taurus** this month. On the **22nd** at midnight it will be **14 degrees** to the above right of the **Moon**and **6 degrees** above the **Pleiades** star cluster. Its last observed magnitude was **10.5**.

At around **6:15pm** on the **23rd** as the sky darkens the bright star **Aldebaran** in **Taurus** will be less than **1 degree** to the right of the **Moon**. An **Occultation of Aldebaran** by the**Moon** occurred between **4:33 – 5:40pm** when it was daylight. Other bright stars in **Taurus** also get occulted by the **Moon**though these are visible from other parts of the world than ours.

On the **25th**\* between **4:00 – 6:00am**\* there is a planned launch from **Yoshinobu, Tanegashima Space Center, Japan** of the Japanese **H-IIA**rocket. It will launch the six optical reconnaissance satellite in **Japan’s Information Gathering Satellite System**. This is the second in the third generation of optical imaging satellites orbited by the Japanese in a program initiated in 2003 to end reliance on foreign allies provided reconnaissance data to Japan, primarily dedicated to watching over **North Korean** missile activities.

At **8:00pm** from the **25th - 28th** low in the west, **Uranus** will be approximately **2½ degrees** to the lower right of the **4.2 magnitude** star **Omicron Piscium** in the constellation of **Pisces**. (For further information please see**'Constellations'** in the website above).

At **6:20pm** on the **28th**, **Venus** will be **5 degrees** above the western horizon with **Mercury**, **3 degrees** to the lower right of it.

An **Occultation of Regulus** by the **Moon** occurs on the morning of the **1st March**. It will disappear behind the **Moon** at approximately **6:09:58am** **(as set from Yeovilton)**. Be up early for this event. The **Moon** will be setting at **6:50am** as the **Sun** rises at **6:56am**.

During this month\* the **NASA** astronauts **Joe Acaba**, **Mark Vande Hei** and cosmonaut **Alexander** **Misurkin** of the Russian space agency **Roscosmos** will undock from **Soyuz** spacecraft from the**International Space Station (ISS)**and land in **Kazakhstan**.

\* = Dates and times are subject to change.

**Facts: Jim Lovell**, **John Young** and **Eugene Cernan** are the only three people to have flown to the **Moon** twice. **Young** and **Cernan** each set foot on it during their respective second lunar missions, while **Lovell** is the only person to have flown to the**Moon** twice without landing.

**News: NASA** postponed the launch of the **Ionospheric Connection Explorer (ICON)** until 2018. The mission was previously planned to launch Dec 8th, 2017, on an **Orbital ATK Pegasus XL** rocket from the **Reagan Test Site** on **Kwajalein Atoll** in the **Marshall Islands**.**NASA** and **Orbital ATK**need additional time to assess a separation component of the rocket.