**Night Sky 2017- December**

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| **Mercury Rises** | **Sunrise** | **Sunset** | **Venus Rises** |

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| 15th – 7:34am  20th – 6:48am  25th – 6:28am  31st – 6:27am | 1st – 7:52am  10th – 8:03am  20th – 8:12am  30th – 8:15am | 1st – 4:07pm  10th – 4:04pm  20th – 4:06pm  30th – 4:13pm | 1st – 7:03am  5th – 7:15am  10th – 7:30am  15th – 7:43am |

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| **Moon Rises New-Full** | **Moon Sets New-Full** | **Moon Rises Full-New** | **Moon Sets Full-New** |
| 1st – 3:18 pm  2nd – 3:52pm  3rd – 4:33pm**(Full)**  **---------------**  19th – 8:47am  20th – 9:32am  21st – 10:11am  22nd – 10:44am  23rd – 11:13am  24th – 11:39am  25th – 12:03pm  26th – 12:26pm**(FQ)**  27th – 12:51pm  28th – 1:17pm  29th – 1:46pm  30th – 2:22pm  31st – 3:07pm  ---------------    A useful site: [www.heavens-above.com](http://www.heavens-above.com/) | 1st – 4:28am  2nd – 5:47am  3rd – 7:08am**(Full)**  **--------------**  19th – 5:28pm  20th – 6:21pm  21st – 7:18pm  22nd – 8:20pm  23rd – 9:24pm  24th – 10:30pm  25th – 11:38pm  26th – **NoMS(FQ)**  27th – 12:49am  28th – 2:02am  29th – 3:18am  30th – 4:36am  31st**–**5:54am  ---------------    Adrian S Zielonka | 4th – 5:24pm  5th – 6:25pm  6th – 7:34pm  7th – 8:48pm  8th – 10:03pm  9th – 11:17pm  10th – **NoMR (LQ)**  11th – 12:28am  12th – 1:38am  13th – 2:45am  14th – 3:51am  15th – 4:56am  16th – 5:59am  17th – 6:59am  18th – 7:56am **(New)**      --------------- | 4th – 8:24am  5th – 9:34am  6th – 10:32am  7th – 11:19am  8th – 11:58am  9th – 12:29pm  10th – 12:55pm**(LQ)**  11th – 1:19pm  12th – 1:42pm  13th – 2:05pm  14th – 2:29pm  15th – 2:55pm  16th – 3:25pm  17th – 4:00pm  18th – 4:41pm**(New)**      --------------- |

The currently brightest comet **C2017 01** at **9.5 magnitude** (as on Nov 20th) is no more than 4 degrees from **Polaris (North Star)** during this month. (For more info on this please visit website above).

 From the **1st** to the **10th**, **Ceres** is near the top right of the back to front question mark **“ ? ”** next to the **4.3** **magnitude** star **Lambda Leonis**inthe **Leo**constellation. The 5 star charts that will be sent with this are each set for midnight; **1) Star chart of Leo and area on 1st, 2) Ceres position on 1st, 3) Ceres position on 4th, 4) Ceres position on 7th, 5) Ceres position on 10th.**

 On the **1st**the **Moon**will be due south at **10:30pm**.

 On the **2nd**at**8:00pm** the **Pleiades** star cluster is **10 degrees**to the above left of the **Moon** with**Aldebaran** in **Taurus 10 degrees** to the lower left of it .

 An occultation of the bright star **Aldebaran** occurs on the **3rd**. This will mainly be seen from north east **Asia**, **Alaska** and north west **Canada**. At **5:30pm** in the **ESE**, **Aldebaran** will be just **3½ degrees** to the upper right of the **Moon**.

 There is planned launch on the **4th**\* of an uncrewed **SpaceX Dragon CRS 13** cargo spacecraft which will lift off on a **Falcon 9** rocket from **Cape Canaveral Air Force Station (CCAFS)** in **Florida**, delivering supplies and equipment to the **International Space Station (ISS)**. It will also deliver several science investigations including a NASA instrument called **Total and Spectral Solar Irradiance Sensor, or TSIS-1**, and a fibre optic payload.

 At **9:00pm** on the **4th** an asteroid named **Massalia** is **4 degrees** above the **Moon**in the constellation of **Orion**. It’s at 8.8 magnitude. (strong binoculars required x10 plus)

 At**midnight**on the **5th,**the asteroid **Flora** is 1 degree to the lower left of the **Moon**. By **2:00am** it will be just under ½ a degree from it. It’s at 8.9 magnitude. (strong binoculars required x10 plus)

 On the **6th** at **9:15pm** the **Moon** is in a straight line with the two bright stars **Castor** and **Pollux**.

 As the **Sun** sets on the **7th**, **Saturn** and **Mercury** are in close conjunction and just **1½ degrees**apart. Unfortunately they will set before the sky darkens.

 “**Occultation of Regulus”** As the **Moon** rises (see above for time) in the **ESE** during the evening of the **8th,** it will be in the constellation of **Leo**. At **10:13:28pm** **(**the time is set for **Yeovilton** though from **Somerton** area, it will only be a few seconds difference, max**)** when the **Moon** is barely 2 degrees above the horizon, the bright star **Regulus** will reappear from behind it. At **10:30pm**on the **8th**, the **Moon** will be just **3 degrees** above the **ESE**horizon. The bright star **Regulus** will be **½ degree** to the upper right of it.

 The **Moon** will be due **East** on the night of the **9th** at **12:30am**.

 At **6:00am** on the **11th**, **Comet 62P Tsuchinshan** will be **5 degrees** to the upper left of the **Moon**and in the **constellation**of **Virgo**. It was at **11th magnitude**on the**20th Nov**. It was at perihelion (closest to the Sun) on November 17th.

**Mercury** is at perihelion (closest to the **Sun** in its orbit) on the **12th**.

 On the **13th**\* at **10:38pm** the **Expedition 53** crew – **Randy Bresnik** of **NASA**, **Sergey Ryazanskiy** of **Roscomos** and **Paolo Nespoli** of **ESA** – will undock their Soyuz spacecraft from the International Space Station's Rasvet module and land in **Kazakhstan**.

From the **18th - 24th November Comet 24P Schaumasse** was its closest to the **Earth** at a distance of **1.459AU**. On the **13th December** at **6:00am** **Comet 24P Schaumasse**will be **7 degrees** to the upper left of the **Moon** and **2½ degrees** to the left of the**3.38 magnitude**star **Zeta Virginis**in **Virgo**. Its magnitude was **11.5** on November 20th.

**Mercury** is at inferior conjunction (between the Sun and the Earth) on the **13th**.

 On the **13th**at **6:00am**, **Mars** will be **6½ degrees** below left of the **Moon** with **Jupiter**, **10 degrees** above the south eastern horizon and **11 degrees** to the lower left of **Mars**.

 The **Geminid** meteor shower reaches its peak on the night of the **13th** and morning of the **14th**. Out of all the meteor showers in 2017, this shower is usually the year’s best and most reliable, with upward of 100 meteors per hour radiating from a spot near the bright star **Castor** in **Gemini**.

 At **6:00am** on the **14th**, **Jupiter** will be **5½ degrees** below left of the crescent **Moon** with **Mars** **6½ degrees** to the upper right of it.

 On the **14th** at **6:45am** the asteroid **Vesta** will be **5 degrees** to the lower left of the crescent **Moon** and **4 degrees**  above left of **Jupiter**.

 On the **15th** at **6:00am**, **Jupiter** will be **7½ degrees** to the upper right of the crescent **Moon**.

 At **6:45am** on the **15th**, **Vesta**will be **7 degrees** to the above right of the crescent **Moon** and **4 degrees**  above left of **Jupiter** forming a perfect 90 degree right angle.

 Soon after **6:00am** on the **16th** the thin crescent **Moon** will be just above the horizon with **Jupiter** some 20 degrees away to the above right of it.

 On the **17th**\* there is a scheduled launch from **Baikonur Cosmodrome**, **Kazakhstan** of the **Soyuz MS-07** spacecraft to the **International Space Station (ISS)** with the **Expedition 54** crew members. They are **NASA** astronaut **Scott Tingle**, **Anton Shkaplerov** of the Russian space agency **Roscomos** and **Norishege Kanai** of the **Japan Aerospace Exploration Agency (JAXA)**. (See ISS news below)

On the **17th**about **40 minutes** before sunrise at **7:30am**, look for the very thin crescent **Moon** which is just **3 degrees** above the south eastern (125 degrees) horizon. When you have found the **Moon**, you will hopefully see **Mercury**, **1 degree** to the lower right of it. By the end of the month **Mercury** will be rising close to **1 hour 45 minutes** before the **Sun**, so there is a good chance you will see it during the second half of this month. It can be easily be seen with the naked eye when you know where to look and if conditions are right.

 A very thin crescent **Moon** will be seen on the **19th** at around **4:45pm**. The **Moon** at that time will be just **4 degrees** above the south west (228 degrees) horizon.

 At **5:12pm o**n the **20th** the thin crescent **Moon** will be due south west and **7 degrees** above the horizon.

 On the **21st**, **Saturn** is in conjunction with the **Sun** and will therefore not be seen this month.

 The **Ursid** meteor shower reaches its peak on the **22nd**.

At **8:00pm** on the **23rd**, **Neptune** will be **10 degrees** above left of the crescent **Moon** and **½ a degree** left of the **3.74 magnitude** star **Hudoor (Ekchusus)** in the constellation of **Aquarius.**

 On the **24th** at **7:00pm** **Neptune** will be just **3 degrees** to the right of the **Moon** near the bright star **Hudoor (Ekchusus)**.

 At **6:30pm** on the **26th** the **Moon** will be **38 degrees** above the horizon and due south.

 On the **27th** at **6:40pm**, **Uranus** is just **5 degrees** directly above the **Moon**.

 On the **30th** at **7:00pm**, **Comet C/2016 R2 Panstarrs** will be **3 degrees**(approx) to the lower right of the **Moon** in **Taurus**.During this month it travels to its current position from the direction of **Orion's belt**and is **0.066AU** **(6,138,000miles)** closer by the **31st**. It is at perihelion in June 2018 and if you miss seeing this comet you will have to wait another 20,327 years for its return!!!!

 “**Occultation of Aldebaran”** During the evening of the **30th** the **Moon** will be traveling through **Taurus** and by **midnight** it will be just **½ a degree** to the right of the bright star **Aldebaran**. Do stay up if you can (yawn) to see the occultation of **Aldebaran**. The disappearance occurs at **1:13:14am** and the reappearance is at **1:56:42am**. These times are set for **Yeovilton** so the further you are away the bigger the difference. (Should be no more than around a few seconds difference for most of us at max). From **Bristol** it disappears at **1:12:06am** and reappears at **1:56:51am** and from **Exeter** it disappears at **1:13:25am** and reappears at **1:55:45am** (lets hope we have a real clear sky tonight for this event). There are other lesser brighter stars that will be occulted during this evening too. If you synchronise your timepieces to**“What time is it?”**in the **heavens-above** website at sometime on the day prior to it, then you won't miss it. Also you will be able to compare times with others. I will note the timings from **Langport** where I live then we can compare results.

 On the **31st** at **9:07pm** the **Moon** will be due south east and **50 degrees** above the horizon.

**Comet 62P Tsuchinshan**on the**31st**will be**1.203AU** from the**Earth**and in the constellation of**Virgo**. Its last observed magnitude was 11 on November 20th. In mid-February it will be at its closest to earth at a distance of **1.025AU**.

 \* = Dates and times are subject to change.

 There are further launches planned from **French Guiana**, **Satish Dhawan**in**India, Xichang**in**China**and**Vostochny** in far eastern**Russia.**

**Fact:** The bright star **Pollux** in the constellation of **Gemini** can be occulted by the **Moon** though this won't happen for hundreds of years.

**ISS News:**Astronaut **Scott Tingle** aged 52 was born in Attleboro, Massachuestts. He is a commander in the US navy and a test pilot and Assistant Program manager-systems Engineering at the Naval Air Station Patuxent River. He will be a flight engineer on the **ISS**.

Cosmonaut **Anton Shkaplerov** aged 45 is married to Tatyana Petrovna and has two daughters named Krisrtina and Kira. He is a Class 2 Air Force pilot-instructor and he is also an Instructor of General Parachute Training, and has performed more than 300 parachute jumps. This will be his third time he has been up to the **ISS**. His previous visits were in 2011/2 and 2014/5. His total amount of days in space are currently at 365.

Astronaut **Norishege Kanai** was born in 1976. He is a lieutenant and Diving Medical Officer in the Japan Maritime Self-Defense Force. He is also a member of the Japan Surgical Society, Japanese Society of Hyperbaric and Undersea Medicine. In July 2015, he participated as an aquanaut in the NEEMO 20 crew.

**News:**An object named **“Oumuamua”** that was discovered on **October 19th 2017** by the **Pan-STARRS 1**telescope in Hawaii, shows its size being cigar shaped. It seems to be a dark red highly elongated metallic or rocky object, that's about 1,300ft (400m) in length and is unlike anything normally found in the solar system. It made its closest approach to **Earth** on October 14th 2017. Its name means **“a messenger from afar arriving first”** in Hawaiian. It’s going away from us at a speed of 85,700 mph. Observations have revealed that its an asteroid from another star system. (If anyone has read the trilogy set of novels starting with **“Rendezvous with Rama” by Arthur C Clarke**, would think this might be an alien spaceship. It has certain similarities in the shape. If you haven't read it and you like a good sci-fi read, get someone to get it for you for Christmas.

 Lets hope we get plenty of clear skies for this month as well as for 2018.

 Hope you all have a really good Christmas

and a Happy New Year to all