Newsletter January 2020

Next Meeting: **20th January 2020, 7pm**

Speaker: TBD

Kyle Academy, Overmills Road, Ayr, KA7 3LR

Contents

President's Word

First of all may I take this opportunity to wish you a very prosperous MMXX and I hope that you all have had an enjoyable festive season and now making the most of 2020's clear skies.

I've been intrigued by an article I came across while whiling away some free time that I had in between digesting turkey and stuffing with the usual accoutrements, a plethora of chocolate, Christmas cake and various imbibed beverages that have left me ruddy faced, partially intoxicated and somewhat weightier.

Apparently a mysterious radio signal is coming from a nearby galaxy, and that galaxy looks surprisingly like our own, astronomers have announced.

Together, the findings could help solve the mystery of fast radio bursts so far unexplained. Very intense blasts of energy that are being sent through the universe, and could be the result of anything from unknown natural phenomena to alien life, it has been speculated.

Astronomers have been hunting for the source of fast radio bursts, or FRBs, for more than a decade. Over that time they have detected hundreds of signals, though pinpointed very few.

The search is difficult in part because they last for just milliseconds and could come from anywhere in the sky, making detailed examination of them incredibly difficult.

In the past scientists have detected 4 of these signals in various galaxies, but the most recent - bringing the total to five – is much more interesting, as the galaxy the signal emanates from, is very much like our own.

"Identifying the host galaxy for FRBs is critical to tell us about what kind of environments FRBs live in, and thus what might actually be producing FRBs," said Sarah Burke-Spolaor, assistant professor of physics and astronomy and co-author on a new paper in the magazine Nature.

"This is a question for which scientists are still grasping at straws."

That discovery adds further mystery to the question of where FRBs are coming from. The first of the blasts came from a tiny galaxy made up of metals and newly formed stars, which led scientists to suggest they might be the result of the kind of stars found there – but that would not apply to the newly found galaxy.

That means astronomers will have to consider other explanations of how FRBs are generated, and might suggest there are multiple origins.

The newly discovered source, named FRB 180916, is only half-a-billion light years from Earth and much nearer than other bursts that have been found in the past. It is seven times closer than the only other repeating burst that has been tracked down.

That could allow for further study of the burst that could give further clues about where the bursts are coming from, scientists said.

So for those of you who have produced optimistic results when calculating the Drake Equation, there may well be a possibility for a lifeform producing these signals, or perhaps if you are of a more pessimistic nature the FRBs may be caused by other explainable scientific processes in the future.

Either way, I think you'll agree that these signals are very exciting, and like me, are keen to find out what exactly is producing these mysterious bursts. Maybe we'll never find out, but I imagine that a fair amount of effort will be made to research the Fast Radio Bursts over the next few years. I look forward to updates!

Clear skies and dew free optics, and hope to see you all at our first meeting of the year...

Roger Harman

January/February Observing

General

The winter sky is now in full prominence with Orion rising just after sunset. The moon will hinder observations early in the month, but by the end of the second week conditions will begin to improve until early February when similar conditions occur.

Key January/February Events

10^{th} Jan: Full moon – sadly making it difficult to see meteors or deep sky objects, it will also pass through earth's outer shadow, an umbral eclipse, but this will be hard to see (19:10 mid eclipse). Next full moon on the 9^{th} of February.

Mercury will make an appearance in the west just after sunset and will best seen relatively close to the horizon between the 5^{th} and 15^{th} of February

Venus is now visible in the westerns sky, and will become more prominent after sunset as it continues on its way to maximum elongation which will occur on the 24^{th} of March.

Mars will appears low in the morning sky (<10 degrees) during these two months, making it challenging to observe

Jupiter and Saturn are too close to the sun to be observed during this period.

Uranus is in Aries, and will be visible throughout this time.

Neptune is low on the horizon in Aquarius making it difficult to see, however, on the 27^{th} of January it will be within 6 arc minutes of Venus, meaning both can be seen together in a relatively higher power telescope. A new moon will also be in the area.

Comet C2017 T2 PANSTARRS: While not a particularly bright comet, it is expected to brighten to about 9^{th} magnitude and can be seen with relatively modest equipment. During the last week of January it will skirt the Double Cluster in Perseus perhaps giving intrepid astro-photographers an excellent imaging opportunity. The moon will not be a problem, so weather permitting it should be a good show. At the end of February it will approach Cassiopeia, before turning towards Camalopardalis. It should continue to brighten somewhat during this period (to 8^{th} mag), thus remaining a telescopic object.

The International Space Station will be visible in the south west at certain times early in the evenings from the 22^{nd} of January through to the 8^{th} of February, it will then make various reappearances from the 23^{rd} of February to the 28^{th} (and in to March) before sunrise. Please consult an ISS finder for more details, a good one is https://www.heavens-above.com. For ISS lunar and solar transits please consult https://transit-finder.com/. A particularly interesting lunar transit will occur on Saturday 1 February at 17:28:41.43, with the centre line just clipping Dalmellington.

Meteor Showers: None predicted for the period, the Quadrantids peak has passed, with the full period being 28 Dec – 12 Jan.

Member Articles

Alex's Space

Winer watchers: Orion the Hunter – Cosmic Casanova?

The appearance of Orion from under the eastern horizon is worth seeing, stand there with his club and lion's pelt. Orion is linked with the Pleiades star cluster, the Pleiades are 7 sisters, daughters of Atlas and Pleione. Orion fell in love with them and pursued them with amorous intent, but unknown to them their mother Pleione fancied Orion! You will see Orion in the sky still chasing them with two faithful companions, the Hunting Dogs.

Orion itself is made up of 7 stars, the most prominent are the 3 stars in a line representing the Hunter's Belt. Look carefully, you will see a faint line of stars pointing down from his belt, these are known as the Sword of Orion, which contains M42, the Orion Nebula, where new stars are being born. More about Orion in a future newsletter.

Happy New Year and may you have clear skies in 2020.

Alex Baillie
December 2019

Member Images

Marc Charron

Comet C2017 T2 PANSTARRS on the 30th of December.

Moon against the stars on the 31st of December, there is a 10th magnitude star right on the left hand edge about to be occulted.

Lunar halo on the 8th of January

Geminids

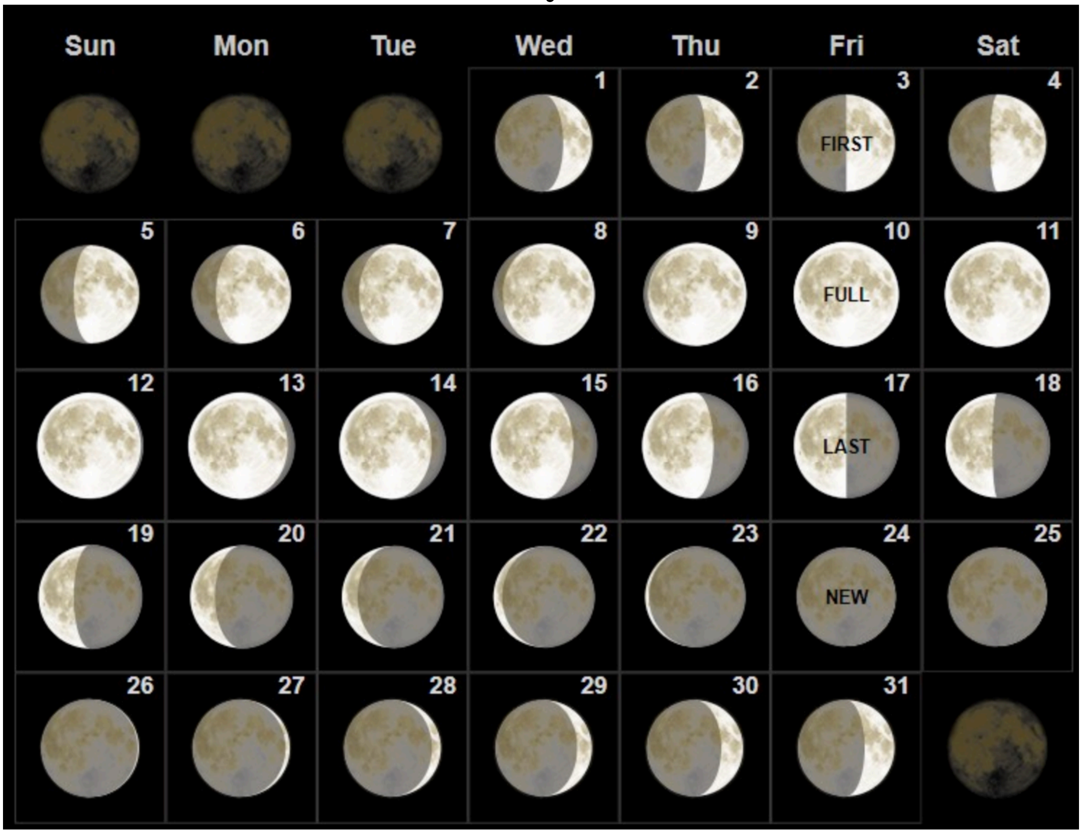
The Geminids did not disappoint this year, despite the interference of a bright moon, cloud and a stiff wind, which may have caused some wiggle in the image below.

Bight one only just caught

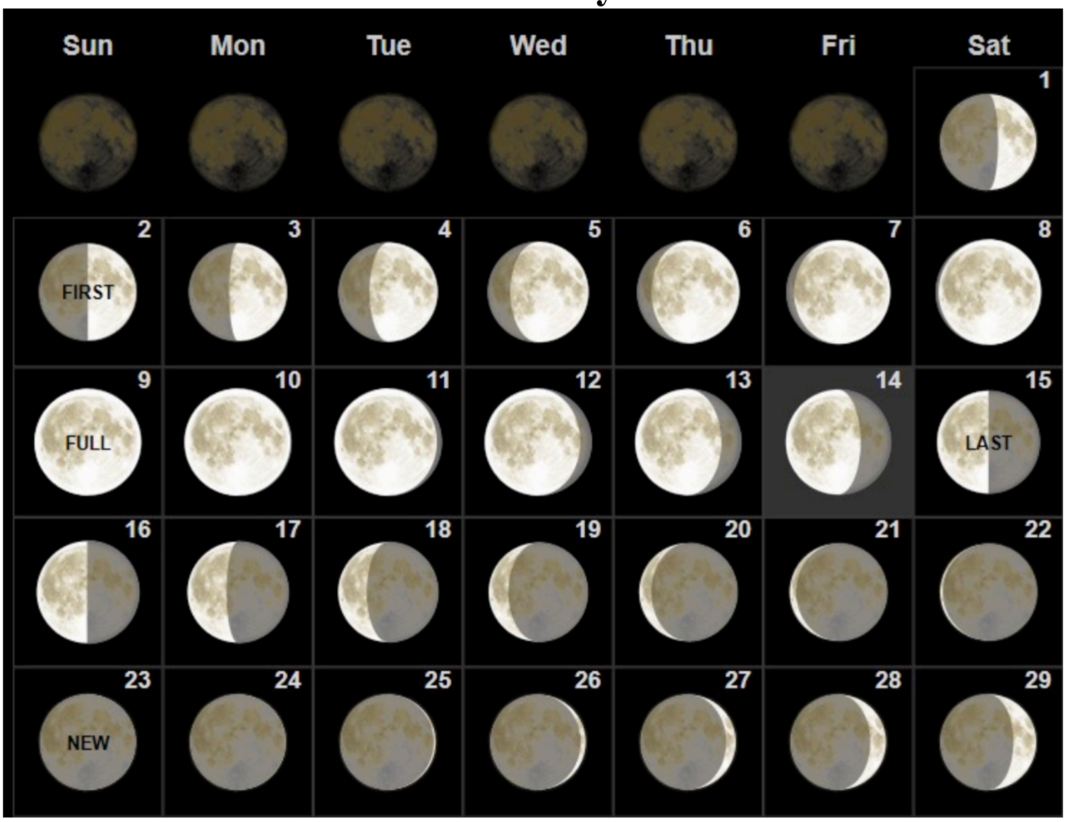
Average Geminid

Moon Phases

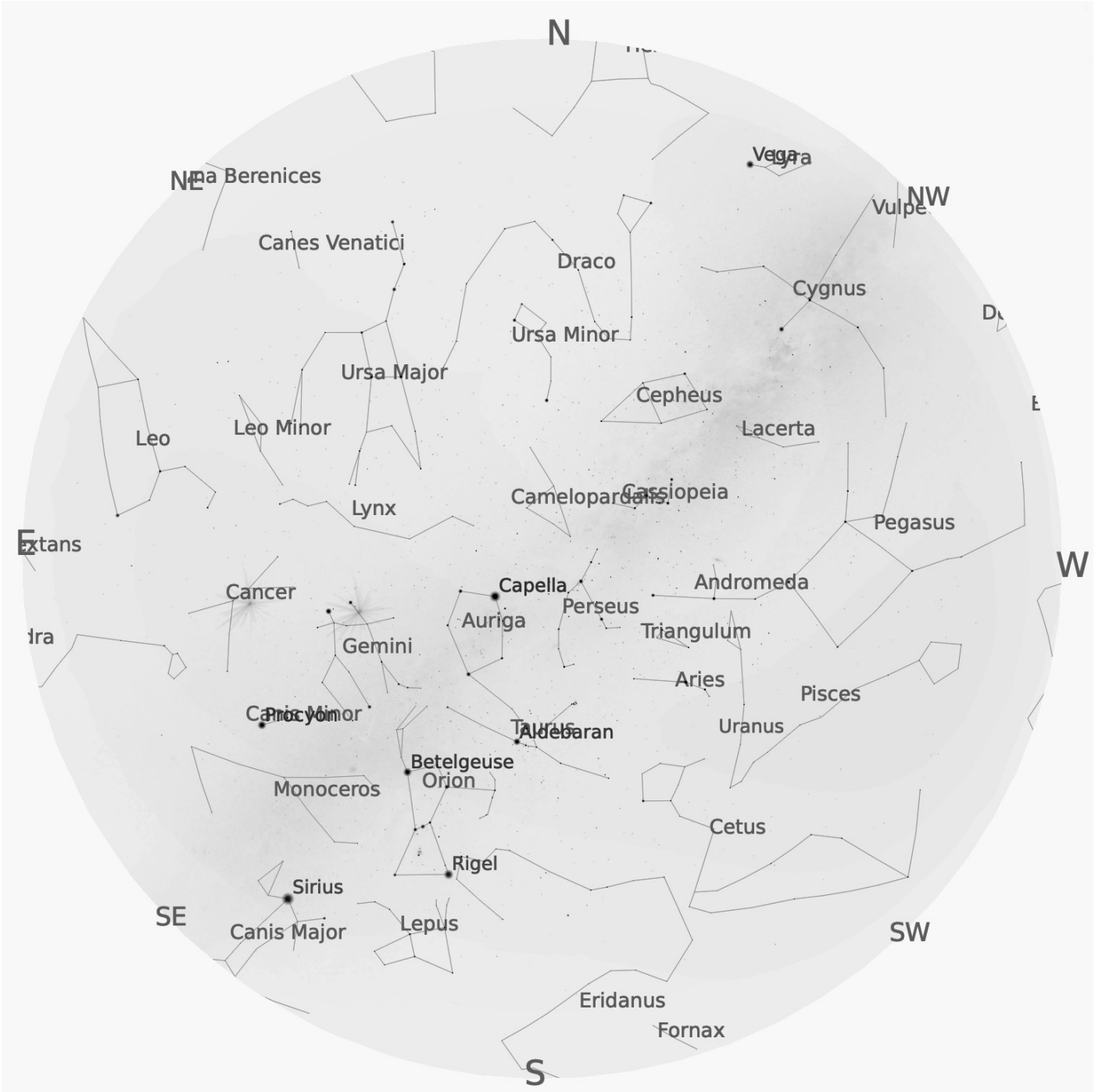
January 2020



February



January Sky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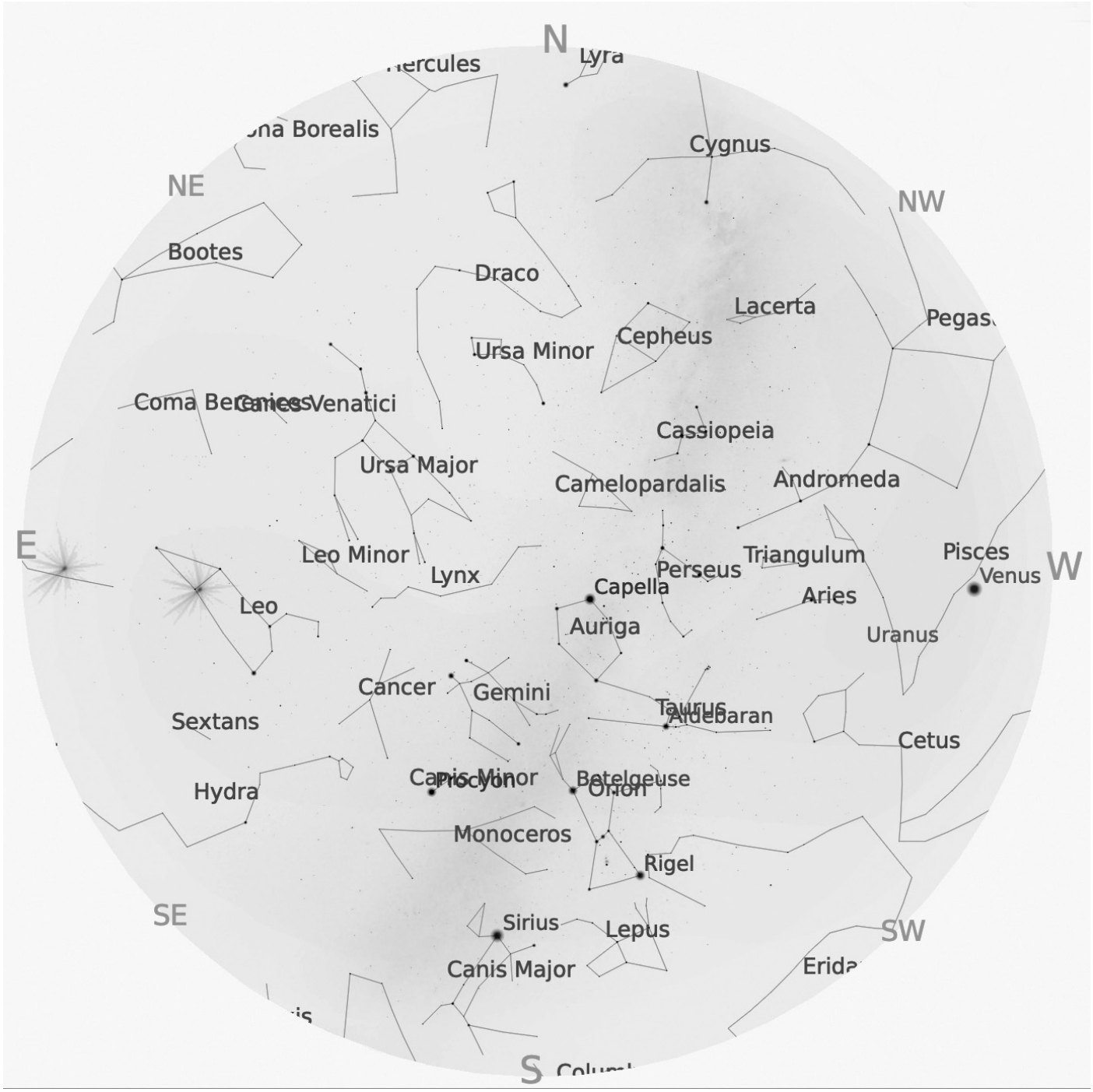
Cassiopeia
Pegasus
Cancer
Capella
Andromeda
Perseus
Auriga
Triangulum
Gemini
Aries
Pisces
Procyon
Uranus
Aldebaran
Betelgeuse
Orion
Monoceros
Cetus
Rigel
Sirius
Canis Major
Lepus
Eridanus
Fornax

February Sky



C/2017 T2 PANSTARRS
On 29 Jan 2020