A pleasantly warm but not hot evening greeted us for the August meeting and it even cleared up later! We welcomed Joe Williams from Exeter University to the society and he talked about some of Exeter's work on the formation of planetary systems. Joe is a PhD student part way through his thesis preparation and specialises in the transportation of material in solar system creation.

He took us through the "basics" of how angular momentum considerations generate a disk of gas and dust around stars as they collapse from molecular clouds. He showed how the profile of the disk varies by distance from the proto-star with dust forming a thin disk while the gas gives a wider profile to the disk with its width increasing by distance from the star. He then went on to look at the dynamics of the movement of dust in the disk. Larger dust particles move inwards while the smaller dust particles are carried around by the gas and tend not to fall towards the star.

While the larger dust particles fall inwards the would accrete to form planetesimals and then eventually planets, the gas tends to move outwards causing regions of high pressure where planet forming rings are created. He showed a number of images from both ALMA and he JWST dhowing these rings.

He also showed graphs and (horror of horrors :-) equations of where in the disk various gases (H2O, CO2, etc) condense out to form ices – the so called snow line. As it turns out, the snow line for the Sun would be at around the Earth's distance so it's possible that the Earth formed with lots of embedded water ice.

We had a number of varied and quite perceptive questions at the end of the talk which showed that people were grasping the material well.

As requested, this was a challenging talk that opened our eyes to some of the details of planetary formation which tends to get glossed over in the usual simple view of how our Earth and all the other planets all over the galaxy were formed.

After the break we had images from Ken who has imaged a number of galaxies and nebulae over the last few months. This included a supernova in NGC7331 which is nearly hidden near the core of the galaxy but showed up well in Ken's raw image. Ian had a couple of solar images taken using his PST (which is usually considered to be a visual only instrument) when he put in a Barlow lens to extend the notoriously poor back-focus.

Terry did his usual look forward to the next months objects in the sky (see below) and showed some images of the recent conjunction of Venus & Jupiter, the inevitable NGC6729 time-lapse and of solar system interloper comet 3I ATLAS (which appears as a faint streak as it moved during the 1 hour exposure).

Next month we will have the much awaited (since September 2019!) visit of Professor Chris Lintott. We hope to see you all there.

# Upcoming Events

## Planets

Mercury is very low in the East at about 5am. Follow a line from Jupiter and Venus. It will get brighter but is already moving closer to the sun. This is its best morning apparition of the year!

Venus has been very bright in the morning sky until about 5:30BST (start of Civil Twilight) and will continue to be about 12 degrees altitude at the start of Nautical Twilight (04:40 at the moment and 05:40 by the next meeting). By the next meeting it will still be visible at 06:30. Venus is in Gemini at the moment but will move into Leo and approach Regulus (more next month).

Mars is too close to the sun for observation and will be for the rest of the year.

Jupiter has had a very nice conjunction with Venus but the separation increases quite rapidly. It's Venus moving rapidly and Jupiter stays in Gemini for the rest of the year.

Saturn is now rising just before it gets dark and is 10 degrees up by the end of Astronomical Twilight (when it gets properly dark). It's 20 degrees up by midnight BST. It's now reasonably bright but it would be easy to miss. It's under the square of Pegasus at about magnitude 1. It will be at opposition on 21st September (and more about this next month as well)

Uranus rises before midnight BST and is just below the Pleiades. It's still very much a morning object but will be 40 degrees up by the start of Astronomical Twilight at 04:00. By the next meeting, it will be near the meridian at the start of Astronomical Twilight (05:00)

Neptune and Saturn are starting to separate and it needs a wide field eyepiece to get them in the same field of view.

Pluto is just past opposition but is very low (never gets above 15 degrees at our latitude)

Total Lunar Eclipse on 7th September. The Moon will rise fully eclipsed at around 19:45 so it might be difficult to see. It leaves the Earth's shadow by 21:00 when it will only be 10 degrees altitude.

Comet 3I ATLAS is in Scorpius and heading for Libra which will make it even more difficult to observe. It's already very faint! Perihelion is at the end of October but it will appear in the morning sky mid-November. It'll be at about magnitude 14 which is fainter than Pluto!

## Upcoming Meetings

Sep 17 Professor Chris Lintott *The Accidental Universe*
Oct 15 Gadgets and Gizmos followed by Observing Session
Nov 19 Heather Johnston *The rise and fall of the giant planet occurrence rate*
Dec 17 Arthur Davis lecture and Christmas Social

## Events

Redstart School Thursday 29th January

# 2026 Programme

**2026**

**Jan 21**

**Feb 18**

**Mar 18 John Stapleton Amateur Astronomy: Why do we do it?**

**Apr 15 David Strange Norman Lockyer**

**May 20 Ask the Panel**

**Jun 17**

**Jul 22**

**Aug 19 Mark Hardaker Astronomical Planning and Recording - How to Get the Most Out of your Hobby**

**Sep 16 Gadgets and Gizmos Evening followed by Observing Session**

**Oct 21**

**Nov 18**

**Dec 16 Christmas Social and members' short talks**

**CADAS meetings start at 7:30pm and last about 2 hours including a break for tea/coffee and cake. We meet at the Village Hall in Norton-sub-Hamdon, TA14 6SF. See http://www.cadas.net/ for further details.**