



This was taken from the 6 inch Newtonian and thru the binoculars with a Samsung G4 phone. ~Ron Setina

Next Meeting: *Astrophotography by CCAS members will be at our Feb 22nd meeting*

Next Star Gazing: Saturday., Feb. 17 at the KOA in Santa Margarita. Bring warm clothes and hot cocoa!

Next Club Meeting

February 22, 2018 at 7pm at 1515 Frederick's Street in SLO

Three CCAS club members: David Majors, Scott McMillan and Ron Settina, will present photographs of celestial objects. All of the photographs were taken by the members themselves! A wide range of objects will be included with special emphasis on the eclipse of 31 January 2018.

About the meeting: Arrive early to be sure you get a good seat! We'll also have time for show-and-tell, so if you have any new astronomy equipment you'd like to share with the group, feel free to bring it along.



Next Star Gazing

Feb. 17 at the KOA in Santa Margarita

Our Sky Star Parties occur once a month, and are free and open to the public, and also weather-permitting.

If you'd like to join us, park at the bottom of the hill and walk up to the telescopes just before sunset. If you're got a large, bulky telescope, please arrive *before* sunset to set up.



We want to welcome all of our members to the year 2018! We have an exciting array of meetings, which, coupled with our star parties, offers an opportunity for all to participate in many interesting events.

Ours is an open club which invites members so send questions and suggestions, and we encourage active involvement.

We hope your new year will fulfill your hopes and dreams.

What Is the Ionosphere?

By Linda Hermans-Killiam, NASA Space Place

High above Earth is a very active part of our upper atmosphere called the ionosphere. The ionosphere gets its name from ions—tiny charged particles that blow around in this layer of the atmosphere.

How did all those ions get there? They were made by energy from the Sun!

Everything in the universe that takes up space is made up of matter, and matter is made of tiny particles called atoms. At the ionosphere, atoms from the Earth's atmosphere meet up with energy from the Sun. This energy, called radiation, strips away parts of the atom. What's left is a positively or negatively charged atom, called an ion.

The ionosphere is filled with ions. These particles move about in a giant wind. However, conditions in the ionosphere change all the time. Earth's seasons and weather can cause changes in the ionosphere, as well as radiation and particles from the Sun—called space weather.

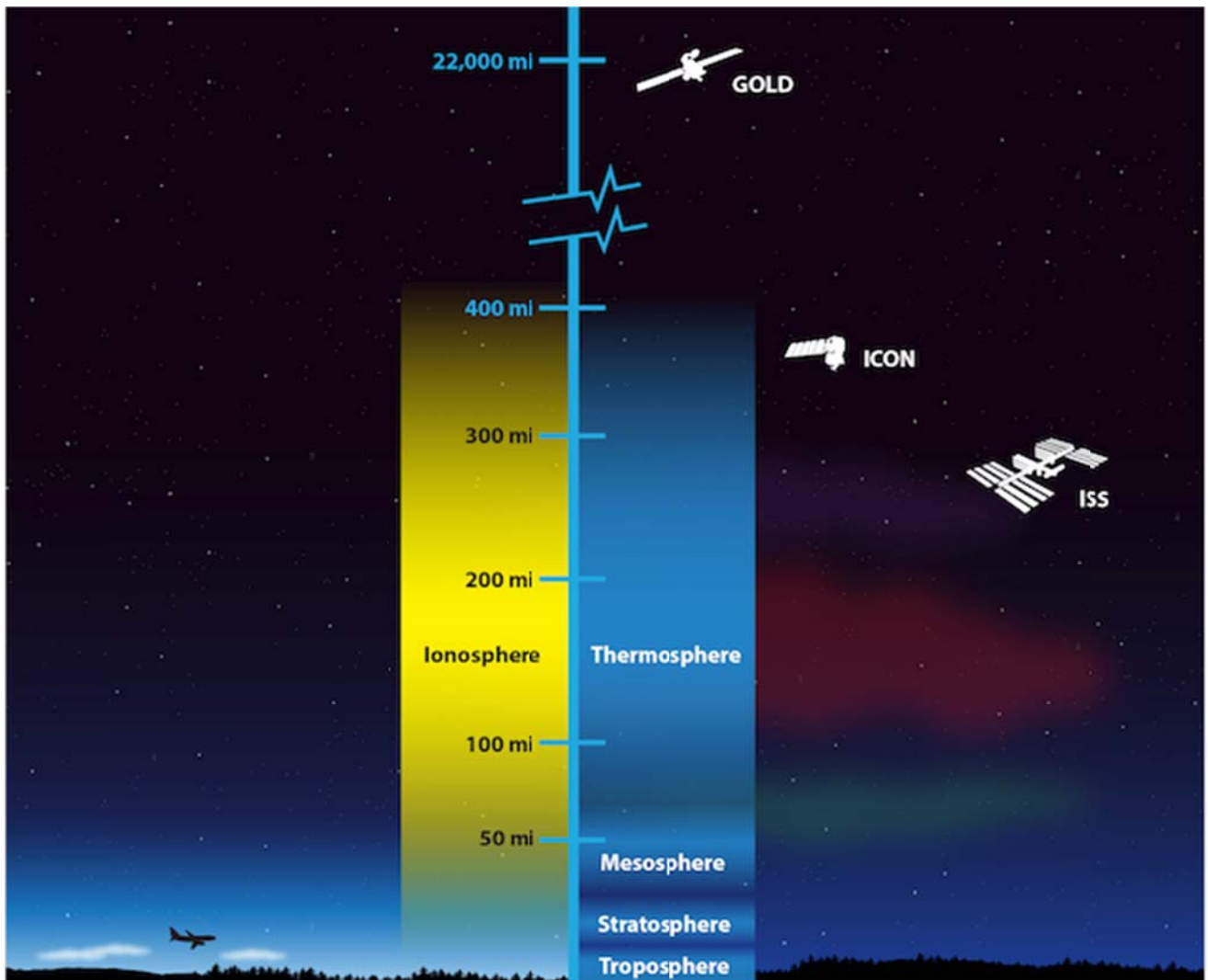
These changes in the ionosphere can cause problems for humans. For example, they can interfere with radio signals between Earth and satellites. This could make it difficult to use many of the tools we take for granted here on Earth, such as GPS. Radio signals also allow us to communicate with astronauts on board the International Space Station, which orbits Earth within the ionosphere. Learning more about this region of our atmosphere may help us improve forecasts about when these radio signals could be distorted and help keep humans safe.

In 2018, NASA has plans to launch two missions that will work together to study the ionosphere. NASA's GOLD (Global-scale Observations of the Limb and Disk) mission launched in January 2018. GOLD will orbit 22,000 miles above Earth. From way up there, it will be able to create a map of the ionosphere over the Americas every half hour. It will measure the temperature and makeup of gases in the

ionosphere. GOLD will also study bubbles of charged gas that are known to cause communication problems.

A second NASA mission, called ICON, short for Ionospheric Connection Explorer, will launch later in 2018. It will be placed in an orbit just 350 miles above Earth—through the ionosphere. This means it will have a close-up view of the upper atmosphere to pair with GOLD’s wider view. ICON will study the forces that shape this part of the upper atmosphere.

Both missions will study how the ionosphere is affected by Earth and space weather. Together, they will give us better observations of this part of our atmosphere than we have ever had before.



CCAS Officers

Feel free to connect with us!



President: Joseph Carro

Vice President: Tom Frey

Communications: Aurora Lipper

Outreach Coordinator: Dave Majors

Treasurer: Lee Coombs

Celestial Advisor: Kent Wallace

Webmaster: Joe Richards

CCAS Contact Information

Founded in 1979, the Central Coast Astronomical Society (CCAS) is an association of people who share a common interest in astronomy and related sciences.

Central Coast Astronomical Society

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