

## Cathay September 2021

[www.cathayradio.org](http://www.cathayradio.org)

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**Mission:** The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

**Monday Night Net Time:** 9 PM Local Time/PST, Repeater: WB6TCS - RX 147.210, TX 147.810, Offset +0.6 MHz, CTCSS/Tone PL100 Hz

Please note: Repeater: N6MNV UHF 442.700 Mhz, Offset +5MHz, CTCSS/Tone PL 173.8 Hz in South San Francisco is cross linked every Monday Night Net at 9 p.m. to WB6TCS 2-meter repeater.

The CARC Monday night net is the best way to find out the latest club news. All check-ins are welcome.

**Message from the President:** George Chong, W6BUR

Hello CARC Members and Friends;

Many thanks to Mr. Denis L. Moore – WB6TCS for the use of his repeater for our CARC Monday Night Net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

## **California COVID-19 Proof of Vaccine record**

If you have your original COVID-19 vaccine issued card showing dates of your vaccine at the time you received your vaccine shot(s), that can be used as proof of vaccination.

For folks wishing for a digital proof of receiving COVID-19 vaccine shots, you can obtain it where a QR code can be sent to you email address or your smart phone.

I actually had to request it twice, once to email address and once to my smart phone.

Please use URL to request and download your digital COVID-19 vaccination records:  
<https://myvaccinerecord.cdph.ca.gov/>

A COVID-19 vaccine booster shot is still pending FDA approval.

For the latest updates on the booster shot, see  
<https://www.cnn.com/2021/09/17/fda-panel-begins-voting-on-pfizers-covid-booster-doses-rejecting-shots-for-general-public.html>

## **COVID-19 - Alternative Treatment To A Ventilator:**

Doctors have been saving some COVID-19 patients that were not doing well on a ventilator by using alternative treatment: ECMO, extracorporeal membrane oxygenation.

ECMO is form of partial cardiopulmonary bypass that uses a pump and artificial lung to circulate oxygenate blood in the patient's body. Thereby functioning as a secondary heart and lungs to assist with the healing process from COVID-19 infection of the lungs.

To read more about it: <https://www.cnn.com/2021/09/19/health/florida-man-inspires-covid-vaccinations/index.html>

## **Tech Article Introduction:**

A 40 year-old mystery as to how Jupiter produces an Aurora along with a spectacular burst of X-rays every few minutes has been solved by a research team co-led by Dr William Dunn of University College London (UCL).

**Chat sub s'em to all you CARC members! - George W6BUR.**

## **Public Service Announcements**

## **HAM CRAM / HAM Licensing**

For upcoming HAM Licensing locations please refer to:

<http://www.arrl.org/find-an-amateur-radio-license-exam-session>

## **Auxiliary Communications Service (ACS)**

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS members perform Net Control duty on a regular basis. On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month from 1900 hours to 2100 hours local time. Currently meetings are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2021 are:

- September 21, 2021
- October 19, 2021
- November 16, 2021

Location of in person future ACS meetings are yet to be determined as the regular location is under reconstruction until January 2023. All interested persons are welcome to attend. For further information, contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

For more information, please attend an ACS meeting, check in on the ACS radio net, or call 415-558-2717.

**Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).**

<http://sf-fire.org/calendar-special-events>

**+ TBD**

Spring into Readiness!

This Virtual Drill will take place from 9am-12pm with virtual skill rotations and words from some special guests!

Invitation and sign-up coming next week!

**+ Recertifications - Coming Soon!**

Now that San Francisco has entered the Red Tier for COVID-19 Transmission (see <https://covid19.ca.gov/safer-economy/#county-status> for more details), we are working to schedule recertification trainings for NERTs who were current as of December 2019 or later. Stay tuned for details and times over the next month! (At this time, all class 5&6 recerts will take place outdoors only, at the SFFD Division of Training at 19th St & Folsom St in the Mission.)

\***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

Visit [www.sfgov.org/sffdner](http://www.sfgov.org/sffdner) to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

**San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)**

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) ([www.sfgov.org/sfnert](http://www.sfgov.org/sfnert)) training and then graduate into two 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

### **SFPD ALERT Training (New Members)**

The next SFPD ALERT training class has been scheduled for: TBD

\* Class date indicated are only for new members

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for a training class by contacting the ALERT Program Coordinator, Marina at [sfpdalert@sfgov.org](mailto:sfpdalert@sfgov.org), or by telephone at 415-401-4615.

### **SFPD ALERT Practice/Training Drill**

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on

**#029 Saturday 11/06/2021 6pm -10 pm via ZOOM** (Night Exercise)

For more information on the San Francisco Police Department ALERT Program, email us at [sfpdalert@sfgov.org](mailto:sfpdalert@sfgov.org), or call Lt. Marina Chacon (SFPD Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:

<https://sfgov.org/policecommission/alert>

## Tech Article



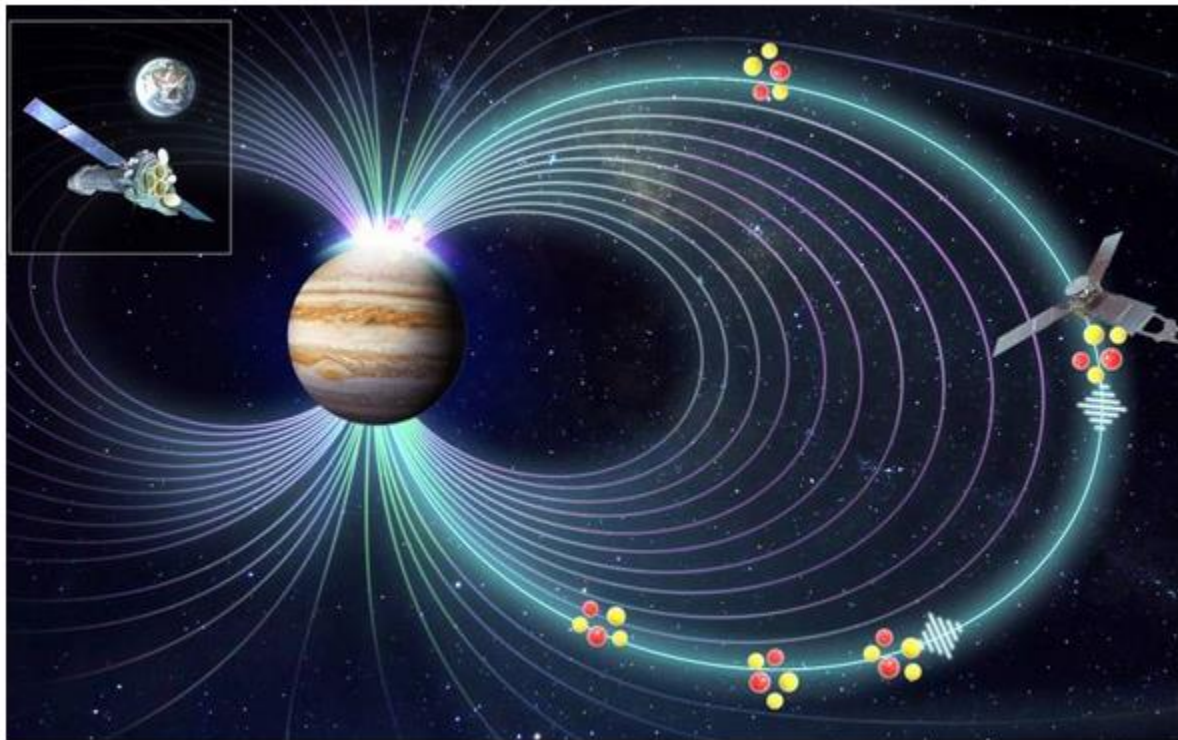
**University College London**

### **Scientists solve 40-year mystery over Jupiter's X-ray aurora**

**Date: 9 July 2021**

<https://www.ucl.ac.uk/news/2021/jul/scientists-solve-40-year-mystery-over-jupiters-x-ray-aurora>

A research team co-led by UCL has solved a decades-old mystery as to how Jupiter produces a spectacular burst of X-rays every few minutes.



The X-rays are part of Jupiter's aurora – bursts of visible and invisible light that occur when charged particles interact with the planet's atmosphere. A similar phenomenon occurs on Earth, creating the northern lights, but Jupiter's is much more powerful, releasing hundreds of gigawatts of energy, enough to briefly power all of human civilisation\*.

In a new study, published in *Science Advances*, researchers combined close-up observations of Jupiter’s environment by NASA’s satellite Juno, which is currently orbiting the planet, with simultaneous X-ray measurements from the European Space Agency’s XMM-Newton observatory (which is in Earth’s own orbit).

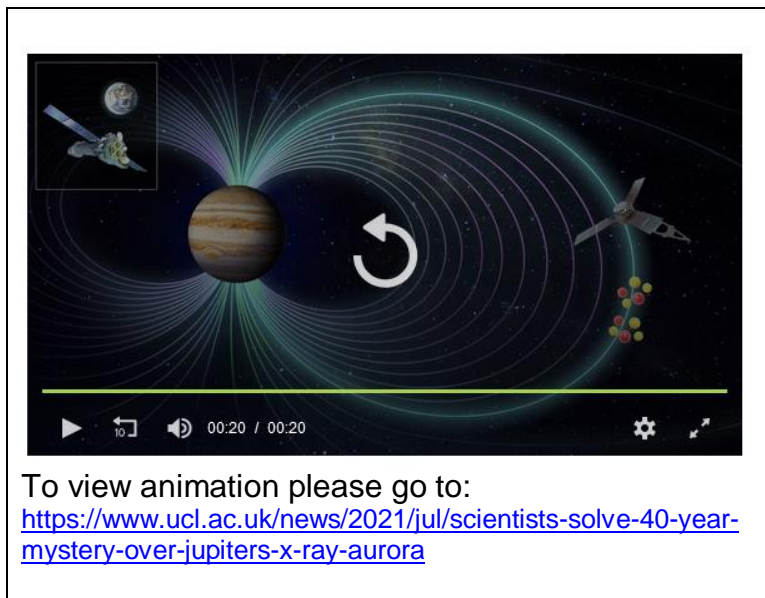
The research team, led by UCL and the Chinese Academy of Sciences, discovered that X-ray flares were triggered by periodic vibrations of Jupiter’s magnetic field lines. These vibrations create waves of plasma (ionised gas) that send heavy ion particles “surfing” along magnetic field lines until they smash into the planet’s atmosphere, releasing energy in the form of X-rays.

Co-lead author Dr William Dunn (UCL Mullard Space Science Laboratory) said: “We have seen Jupiter producing X-ray aurora for four decades, but we didn’t know how this happened. We only knew they were produced when ions crashed into the planet’s atmosphere.

“Now we know these ions are transported by plasma waves – an explanation that has not been proposed before, even though a similar process produces Earth’s own aurora. It could, therefore, be a universal phenomenon, present across many different environments in space.”

X-ray auroras occur at Jupiter’s north and south poles, often with clockwork regularity – during this observation Jupiter was producing bursts of X-rays every 27 minutes.

The charged ion particles that hit the atmosphere originate from volcanic gas pouring into space from giant volcanoes on Jupiter’s moon, Io.



This gas becomes ionised (its atoms are stripped free of electrons) due to collisions in Jupiter's immediate environment, forming a doughnut of plasma that encircles the planet.

Co-lead author Dr Zhonghua Yao (Chinese Academy of Sciences, Beijing) said: "Now we have identified this fundamental process, there is a wealth of possibilities for where it could be studied next. Similar processes likely occur around Saturn, Uranus, Neptune and probably exoplanets as well, with different kinds of charged particles 'surfing' the waves."

Co-author Professor Graziella Branduardi-Raymont (UCL Mullard Space Science Laboratory) said: "X-rays are typically produced by extremely powerful and violent phenomena such as black holes and neutron stars, so it seems strange that mere planets produce them too."

"We can never visit black holes, as they are beyond space travel, but Jupiter is on our doorstep. With the arrival of the satellite Juno into Jupiter's orbit, astronomers now have a fantastic opportunity to study an environment that produces X-rays up close."

For the new study, researchers analysed observations of Jupiter and its surrounding environment carried out continuously over a 26-hour period by the Juno and XMM-Newton satellites.

They found a clear correlation between waves in the plasma detected by Juno and X-ray auroral flares at Jupiter's north pole recorded by X-MM Newton. They then used computer modelling to confirm that the waves would drive the heavy particles towards Jupiter's atmosphere.

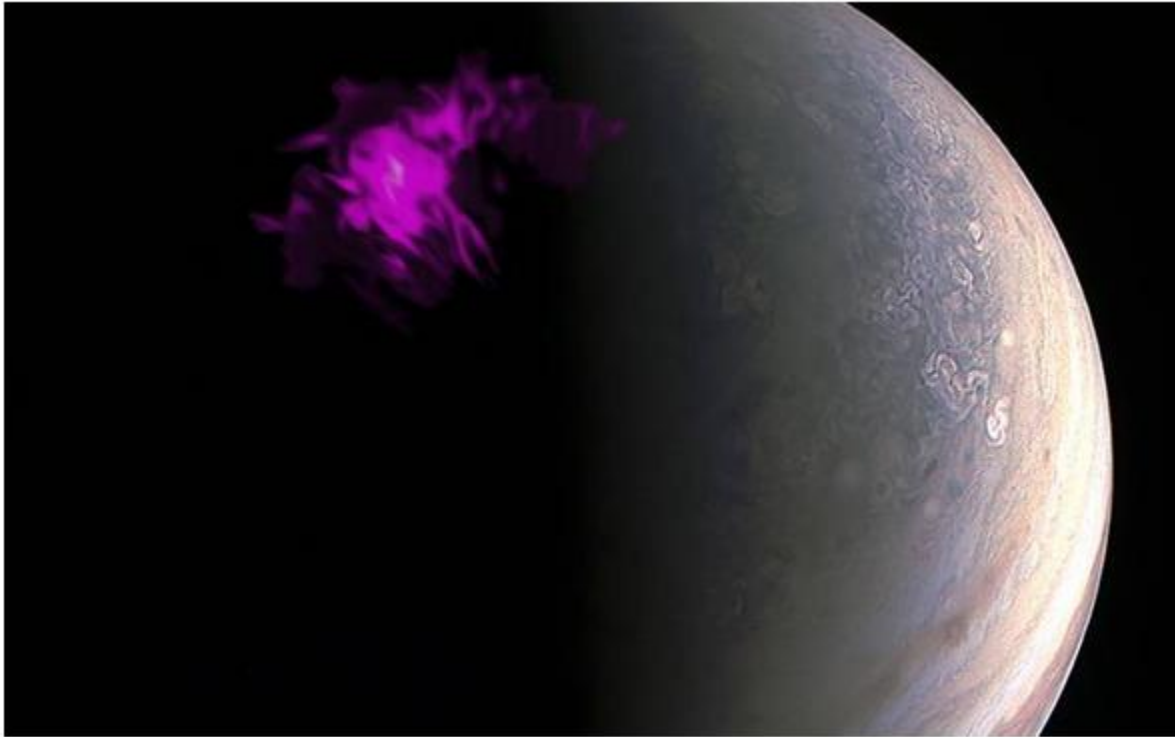
Why the magnetic field lines vibrate periodically is unclear, but the vibration may result from interactions with the solar wind or from high-speed plasma flows within Jupiter's magnetosphere.

Jupiter's magnetic field is extremely strong – about 20,000 times as strong as Earth's – and therefore its magnetosphere, the area controlled by this magnetic field, is extremely large. If it was visible in the night sky, it would cover a region several times the size of our moon.

The work was supported by the Chinese Academy of Sciences, the National Natural Science Foundation of China, and the UK's Science and Technology Facilities Council (STFC), Royal Society, and Natural Environment Research Council, as well as ESA and NASA.

\* Jupiter's X-ray aurora alone releases about a gigawatt, equivalent to what one power station might produce over a period of days.





## Links

- [Dr William Dunn's academic profile](#)
- [Professor Graziella Branduardi-Raymont's academic profile](#)
- [UCL Mullard Space Science Laboratory](#)
- [UCL Mathematical & Physical Sciences](#)

## Image

- Credit: ESA/NASA/Yao/Dunn. Bottom image: Overlaid image of Jupiter's north pole from NASA's satellite Juno and NASA's Chandra X-ray telescope. The X-ray aurora (purple) is overlaid on a visible Junocam image.

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