STARLITE

THE JOURNAL FOR THE STOURBRIDGE AND DISTRICT A.R.S.

G6OI

G6SRS

G4CVK

ISSUE: OCTOBER 2021

STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY

INCORPORATING

OLDSWINFORD HOSPITAL SCHOOL RADIO CLUB

MEETINGS NORMALLY HELD AT

OLDSWINFORD HOSPITAL SCHOOL
HEATH LANE
STOURBRIDGE
[8:00 TO 10:00 PM]

VISITORS ALWAYS WELCOME

DURING COVID, THE SOCIETY HOLDS ITS MEETINGS
EVERY MONDAY ON 2M FM AND ZOOM VIDEO

RSGB AFFILIATED SOCIETY

STARLITE

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StARS Website URL:-
www.g6oi.org.uk

StARS Facebook Page:-
https://www.facebook.com/groups/stourbridge.ars/

Forthcoming Meetings

October 4th	Club Net 145.325MHz FM & Zoom Video. 8pm
October 11th	Club Net 145.325MHz FM & Zoom Video. 8pm
October 18th	**Zoom Presentation By A Guest Speaker ?? 8pm**
October 25th	Club Net 145.325MHz FM & Zoom Video. 8pm
November 1st	Club Net 145.325MHz FM & Zoom Video. 8pm
November 8th	Club Net 145.325MHz FM & Zoom Video. 8pm
November 15th	**Zoom Presentation By A Guest Speaker ?? 8pm**
November 22nd	Club Net 145.325MHz FM & Zoom Video. 8pm
November 29th	Club Net 145.325MHz FM & Zoom Video. 8pm
December 6th	Club Net 145.325MHz FM & Zoom Video. 8pm
December 13th	Club Net 145.325MHz FM & Zoom Video. 8pm
December 20th	**Zoom Presentation By A Guest Speaker ?? 8pm**
December 27th	Club Net 145.325MHz FM & Zoom Video. 8pm
January 3rd 2022	Club Net 145.325MHz FM & Zoom Video. 8pm

Editor's Comment

I understand that contact was made with the Headmaster at OSH, who stated that we shall still be welcome to have our meetings at the school, but details are to be agreed. Meanwhile, attempts are being made for a temporary meeting place. If you have any ideas for this, please contact John M1EJG, the Hon Sec.

Following my comment, last month, about not getting any feedback from items in Starlite, I was pleased to receive an email from John G3KZG regarding *Improving CW Speed*. John wrote to me:

I read your article about wanting to improve your cw speed. I have been trying for some months now to find suitable transmissions ,with no success.

Seeing the article about Phoenix kits (phoenixkitsonline.co.uk) I visited their website and bought 2 kits an FMT tutor and a PT20 tutor.

The kits are truly professional and very well presented.Both kits were complete except the FMT had one incorrect resistor,I do not think that it would have made much difference but I put the correct value in anyway.

I built both kits and they worked first time. You need a fine tipped soldering iron and very thin solder.

The instructions are complete with pictures and text and apart from dry joints I do not think that the builder could make any mistakes.

My cw background was similar to yourself my Father was trying to learn by himself so at the age of about 9 I learned with him and we got to about 15 wpm and he took the test and passed and got G3CLG.

I did no more morse until I joined the Royal Air Force and became a wireless operator, I was then able to obtain my callsign G3KZG in 1956. I reached about 35wpm, 55 on figures plus learning the Russian alphabet and the short figures.

We were taught to write everything down so speeds were limited to handwriting speed.At 35 wpm you were 1 five letter group behind.

I did quite a lot of cw after leaving the Services and was part of the operating team when StARS won NFD.

My speed is now about 20wpm so I will have to practice my sending.

John G3KZG

And here are a couple of You Tube links from Jim G4WAO:

The Side-Slippers James Oglethorpe's online presentation about RAAF 3 Squadron:

https://www.youtube.com/watch?v=kKXiLUlbfaA

"Gliding Off to War" https://youtu.be/HtGJx62nV8M

Foundations of Amateur Radio

Here be Dragons, venturing into uncharted territory ...

Sometimes when you head into uncharted territory, you gotta laugh at yourself from time to time. Last weekend I participated in a contest, something I enjoy doing as you might recall. To simplify the process of setting up in a vehicle I'd proposed a bold plan to save space and reduce complexity. I was anxious about reducing the amount of technology because I'd come up with a plan to use a paper log to track my contest contacts.

I had visions of operating for the best part of 24 hours and making hundreds of contacts. This was based on the fact that in 2016 I'd done this same contest on my own and made a 138 contacts and scored 18221 points, having moved 17 times.

I'd also done the contest in 2018 and for reasons I don't recall, I made one contact over 8 hours.

That right there should have been a warning sign that I might not quite get the result I'd been fearful of.

Blissfully unaware of the adventure that was unfolding, after driving to the first location, I called CQ for the better part of an hour. Then I called some more. When I was done with that, I called CQ more. 90 minutes in, I made my first contact.

That pretty much set the pattern for the next nine hours. At one point we feared that the radio had packed up, but then I made a 2900 km contact with the other side of the country between me in Perth in VK6 and Catherine VK7GH in Tasmania.

Around five pm we packed up, having moved location six times, making eight contacts and claiming 64 points, having worked three of the six states I heard.

Talk about overblown fears.

Looking back, even documenting 138 contacts on paper doesn't seem nearly as daunting after the fact, but that's for another day. I did learn some other things too.

I was worried about logging the band correctly, since using a computer that's not connected to the radio requires an extra step when you change band. Using paper the issue wasn't the band, it was remembering to record the time.

We didn't have the opportunity to test all the gear before the contest. I was bringing in some extra audio splitters, which didn't work with the set-up we had, testing before hand would have revealed that. We knew that there was a risk associated with not testing before and decided that in the scheme of things it didn't matter and we were right. It didn't.

We hadn't much planned for food and pit-stops, but having a GPS and an internet connection solved all those issues almost invisibly. Of course that wouldn't work in an unpopulated area, but we were well inside the metropolitan area of a big city, well, Perth.

Using a head-set worked great, though it didn't have a monitoring feature, so my voice got louder and louder and Thomas VK6VCR who took on the tasks of navigating and driving became deafer and deafer as the day progressed.

I keep coming back to wanting a portable voice-keyer, a device that you can record your CQ call into and then at the press of a button, play it back so you don't lose your voice whilst calling CQ hour after hour. The challenge seems to be that you need to find a way to incorporate it into the existing audio chain so it doesn't introduce interference.

Winning a contest requires contacts and that can only happen if there are other participants. This time around there didn't seem to be that many on air making noise. I think I heard a grand total of 13 stations. Some of that was due to propagation conditions which were nothing like I've ever heard before, but perhaps if I stick around for another solar cycle, that too will become familiar. Atrocious is one word that comes to mind.

Continuing our learning, the weather, not just space-weather, actual earth weather, snow, rain, hail and in our case sun. Neither of us thought to bring a hat since the forecast was for intermittent rain. We had no rain, instead had the opportunity to bask in the winter sun. Yes, it's winter here in Oz when it's Summer in Europe. As it happens, our winter temperatures are like your summer ones, but I'll leave it to you to confirm that for yourself.

Finally, we have a local phenomenon in VK6. When the sun goes down, the 40m band comes alive with the sounds of Indonesia. Among the radio amateurs are plenty of pirate stations with massive AM transmitters enjoying the conditions, chatting, chanting and what ever else comes to voice. Not conductive to being on-air and making noise, but as far as I can tell, not commonly heard outside of VK6.

That said, the Indonesian radio amateur community must have the patience of saints putting up with the interference that their non-licensed countrymen cause on a daily basis. My hat off to you!

As I've said all along, this radio thing is about getting on air and having fun and I can tell you, we did.

What did you get up to?

I'm Onno VK6FLAB

• *This article is the transcript of the weekly 'Foundations of Amateur Radio' podcast, produced by Onno Benschop, VK6FLAB who was licensed as radio amateur in Perth, Western Australia in 2010. For other episodes, visit http://vk6flab.com/. Feel free to get in touch directly via email: cq@vk6flab.com*

• *If you'd like to join a weekly radio net for new and returning amateurs, check out the details at http://ftroop.vk6flab.com/, the net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link, Brandmeister and 2m FM via various repeaters, all are welcome*.

Farnham WebSDR to shut down

The popular amateur radio WebSDR at Farnham is to cease operation.

A notice on the website reads:

"Owing to a change of site ownership the Farnham WebSDR and other radio operations utilising the site will cease within the next few weeks.

We would like to thank the current site owner for their support over the past few years, and hope that we will eventually be able to relocate to a new site.

If anyone can help identify a suitable location, please contact us."

Farnham WebSDR http://farnham-sdr.com/

Ukraine special event

Look for special event station EM30RUARL from Chernihivska to be active between now and December 31st.

Activity is to celebrate the 30th anniversary of the Independence Day of Ukraine and the 30th anniversary of establishment of the Ukrainian Amateur Radio League (UARL).

QSL via UX7UU (UARL Bureau is OK). EM30RUARL is good towards the "UARL-30" award.

Other callsigns to look for towards the award are:

EM30UARL, EM30AUARL, EM30BUARL, EM30CUARL, EM30DUARL, EM30EUARL, EM30FUARL, EM30GUARL, EM30HUARL, EM30IUARL, EM30KUARL, EM30LUARL, EM30MUARL, EM30NUARL, EM30PUARL, EM30QUARL, EM30RUARL, EM30SUARL, EM30TUARL, EM30VUARL, EM30WUARL, EM30XUARL, EM30YUARL, EM30ZUARL and EM30LRU.

Tonga update

Masa, JA0RQV, is now active as A35JP from Nuku'alofa, Tongatapu Island (OC-049). He was heard on 17 meters CW, August 22nd. He will be in Tonga until October 31st (early November).

Activity will be on 80-6 meters using CW, SSB and FT8. Equipment is an IC-7300 w/100W into a Vertical antenna.

QSL via LoTW and ClubLog, or direct w/2 USDs or by the Bureau via his home callsign JA0RQV.
He states, "If you need paper QSL, please be patient to receive it because I will be able to issue paper QSL after I return to Japan in November 2021. Please do not send SASE to my home address."

He also mentions, "During the period, if possible, I will try to activate some outer islands again such as Niuatoputapu (OC-191), Niuafo'ou (OC-123), Vava'u (OC-064) and Ha'apai (OC-169). Details will be announced once decided."

For more details and updates, visit his QRZ.com or his Blog page at: http://blog.goo.ne.jp/rqv

Amateur Radio Digital Communications

Since its allocation to Amateur Radio in 1981, Internet network 44, known as the AMPRNet™, has been used by amateur radio operators to conduct scientific research and to experiment with digital communications over radio with a goal of advancing the state of the art of Amateur Radio networking, and to educate amateur radio operators in these techniques.

Amateur Radio Digital Communications [ARDC] is a non-profit public benefit California corporation formed to further these goals. It does so by managing the allocation of network resources, encouraging research and experimentation with networking protocols and equipment, publishing technical articles, and other activities to promote the public good of Amateur Radio digital communications and related fields. We have recently begun to contribute funding to organizations, groups, individuals, and projects towards these and related goals.

Amateur Radio is an entirely volunteer activity performed by technically knowledgeable hobbyists who have proven their ability by passing government examinations (e.g., in the USA, exams are set by the Federal Communications Commission). No remuneration is permitted. Ham radio, as it is known, has proven its value in advancements of the state of the communications arts as well as in public service during disasters and times of emergency. (For more about ham radio, see the Wikipedia article, or visit ARRL, RSGB, IARU or any of the many national amateur radio organizations.)

https://www.ampr.or

German Special Event

Members of the DARC local association Schwerin (V14) have activated the special callsign DQ850DOM to celebrate the 850th anniversary of the first consecration of the Schwerin Cathedral.

Activity will last until November 30th, with operations on 160 meters and up including the QO-100 Satellite using CW, SSB, RTTY, FT8 and other Digital modes.

A free downloadable diplomas (Gold/Silver/Bronze) are available free of charge in PDF format. See QRZ.com for details.

QSLs will be automatically sent via the Bureau after the activity - PLEASE do not send your own QSL! Logs will be uploaded to DCL and ClubLog

Maldives op

Nobby, G0VJG, will once again be active as 8Q7CQ between September 28th and October 13th. This will be his third trip there, but this time he will be active from the Island of Innahura (AS-013).

Activity will be on 80-10 meters (this now includes 60m) using SSB and the Digital modes.

His equipment will be a FT-450D or FT857 with a JUMA 1000 watt amp into HF6V Butternut vertical for the HF bands and a link dipole.

QSL via M0OXO's OQRS or direct.

Exercise Blue Ham

The **RAF Air Cadets (RAFAC)** are pleased to announce that they are proposing to run their ever-popular Blue Ham Radio Communications Exercise in October 2021.

The exercise will take place during the weekend of 16 and 17 October 2021, when we hope that you can put some time aside to join in with the cadets and staff on the exercise, details of the exchange of information to count as a QSO will be published on our website at https://alphacharlie.org.uk/exercise-blue-ham early October.

Also, we will issue you a Blue Ham participation Certificate if you contact 15 or more special MRE Callsigns over the period of the exercise, details of how to do this will be on the alphacharlie.org.uk website.

We hope to meet many of you on the air during the exercise, all the best from all at the Blue Ham Radio Team.

Solar Cycle 25 numbers for Sept. 2021

Sept 2021 is winding down and here is a preview of the Solar Numbers we can expect this Friday. The Solar Flux for Sept looks to be 86.5 Measured and 88 adjusted for 1 AU. This is the secondest highest readings of the new Solar Cycle topped only by the dramatic run-up last November.

Take a good long last look at those numbers as the current ramp-up in Solar Activity will easily blast through them in October. In the closing 36 hours of the month the 10.7 cm had jumped up 12 points to 101 and was rising fast as this report was being typed up.

The Monthly Mean Sunspot Number Number for September will be in the Low to Mid 50s (New Scale) say 54 (New Scale) when converted to the Old Scale so we can compare it to traditional counts it equates to (38 Old Scale). The Smoothed Sunspot Number (SSN) for Sept is 46 (New Scale) 32 (Old Scale). September's Sunspot Numbers are easily the highest of the new Solar Cycle thus far.

And the good news doesn't stop there. On Sept 14th Scott MacIntosh from the National Center for Atmospheric Research announced that he expects the termination event concluding Cycle 24 is imminent and a rapid run-up in Solar Activity to commence in Mid-November. Solar Minimum was recorded in November 2019, the last SWPC numbered SC24 sunspot was observed in July 2020, the last un-numbered SC24 Active Region was observed on August 14, 2021. It appears that Cycle 24 is over.

73s and Best DX

AA6XE

3-band vertical for portable use

In this video **Bruce G4ABX** demonstrates a 3-band (40m, 30m, and 20m) portable vertical 1/4 wave antenna (also suitable for a small garden if matching unit waterproofed)

The matching section (base loading coils) is courtesy of the QRPGuys' https://qrpguys.com/

My application uses a 7m fibreglass fishing pole and a PA Speaker stand as the base support -- so the antenna is completely free standing. The design has 4-off 10 foot radials. More radials will improve efficiency -- slightly, but at the expense of convenience. (More, or longer radials will not be so quick to deploy or take up!)

The complete antenna can be deployed -- or taken down in less then 10 minutes and the telescopic fibreglass mast is stored inside the speaker stand for safe transportation and storage.

SWR for all three bands is less than 1.7:1 and this is s resonant design so no ATU is needed. (Ideal for the FT817ND or ICOM IC-705 etc.)

I use this antenna in conjunction with my KX3 GoBox and performance is very good. Power handling of the matching unit is 20 Watts PEP max. (I also use it with a Xeigu G90.)

Safety: Check there are no overhead cables above the area you plan to deploy the antenna. Never deploy an antenna in the vicinity of overhead cables.

Feel free to emulate and experiment. After all, that what this hobby is all about :-)

73 Bruce G4ABX

Watch *3 band portable or small garden vertical antenna for 40m, 30m, 20m* here:

https://www.youtube.com/watch?v=g0LBoYPAccA

Software Defined Radio Academy talks on YouTube

The **Software Defined Radio Academy** SDRA 2021 took place June 26-27 and the talks are now available on YouTube

The description of talks can be seen at

https://2021.sdra.io/pages/programme.html

The videos are available at

https://www.youtube.com/c/SoftwareDefinedRadioAcademy/videos

Hackaday: Where's that radio? A brief history of direction finding

Al Williams WD5GNR writes on Hackaday about radio navigation and direction finding

We think of radio navigation and direction finding as something fairly modern. However, it might surprise you that direction finding is nearly as old as radio itself.

In 1888, Heinrich Hertz noted that signals were strongest when in one orientation of a loop antenna and weakest 90 degrees rotated. By 1900, experimenters noted dipoles exhibit similar behavior and it wasn't long before antennas were made to rotate to either maximize signal or locate the transmitter.

Of course, there is one problem. You can't actually tell which side of the antenna is pointing to the signal with a loop or a dipole. So if the antenna is pointing north, the signal might be to the north but it could also be to the south. Still, in some cases that's enough information.

Read the full story at

https://hackaday.com/2021/08/19/wheres-that-radio-a-brief-history-of-direction-finding/

Building a hundred-year-old radio transmitter

Our Hackaday team is spread across the world, but remains in easy contact through the magic of the Internet. A number of us hold amateur radio callsigns, so could with a bit of effort and expenditure do the same over the airwaves. A hundred years ago this would have seemed barely conceivable as amateurs were restricted to the then-considered-unusable HF frequencies.

Thus it was that in December 1921 a group of American radio amateurs gathered in a field in Greenwich Connecticut in an attempt to span the Atlantic. Their 1.3 MHz transmitter using the callsign 1BCG seems quaintly low-frequency a hundred years later, but their achievement of securing reception in Ardrossan, Scotland, proved that intercontinental communication on higher frequencies was a practical proposition.

A century later a group from the Antique Wireless Association are bringing a replica transmitter to life to recreate the event.

Read the full Hackaday article at:

https://hackaday.com/2021/08/31/building-a-hundred-year-old-radio-transmitter/

Eavesdropping by LED

If you ever get the feeling someone is watching you, maybe they are listening, too. At least they might be listening to what's coming over your computer speakers thanks to a new attack called 'glow worm.'

In this novel attack, careful observations of a power LED on a speaker allowed an attacker to reproduce the sound playing thanks to virtually imperceptible fluctuations in the LED brightness, most likely due to the speaker's power line sagging and recovering.

You might think that if you could see the LED, you could just hear the output of the speaker, but a telescope through a window 100 feet away appears to be sufficient. You can imagine that from a distance across a noisy office you might be able to pull the same trick. We don't know - but we suspect - even if headphones were plugged into the speakers, the LED would still modulate the audio. Any device supplying power to the speakers is a potential source of a leak.

On the one hand, this is insidious because, unlike more active forms of bugging, this would be pretty much undetectable. On the other hand, there are a variety of low-tech and high-tech mitigations to the attack, too. Low tech? Close your blinds or cover the LED with some tape. High tech? Feed a random frequency into the LED to destroy any leaking information. Super spy tech? Put fake speakers in front of your real speakers that silently playback misinformation on their LEDs.

The video plays samples of recovered speech and, honestly, it was clear enough but not great. We wondered if a little additional signal processing might help.

Passive bugs are hard to find. Even a fancy junction detector won't tell you if your speakers are compromised by glow worm.

https://hackaday.com/2021/08/25/eavesdropping-by-led/

• Our thanks to Stephen, G7VFY for the above information

Ofcom EMF Regulations talk now on YouTube

At the G-QRP Convention on September 5 the Chair of the RSGB EMC Committee, **John M0JAV**, gave a talk about Ofcom's new EMF Assessment regulations

The G-QRP Club has shared a video of the talk to enable everyone to learn more before the EMF compliance deadline.

Watch John, M0JAV, Explains the new EMF Assessments

https://youtu.be/pNbXK6mLYhM

RSGB EMF page which includes a link to the RSGB-Ofcom EMF Calculator

https://rsgb.org/emf

G-QRP Club

http://www.gqrp.com/
https://groups.io/g/gqrp

The Gambia

Gerard, F5NVF, will be active as C5C from Kololi, The Gambia, between October 24th and November 19th (maybe more if he can stay there longer).

Activity will be on 60-10 meters using CW and SSB, with an IC-7000 w/100 watts.

He will be joined later by Luc/F5RAV and Abdel/M0NPT to be active on all bands with an IC-705 and Expert 1.3 amp using CW, SSB, FT8 and the QO-100 satellite if possible (between October 28th and November 8th).

They are also planning to be active in CQWW DX SSB Contest (October 30-31st). QSL via F5RAV

Madeira Island

Operators Helmut DF7EE and Elmar PD3EM will once again be active as CT9/DF7EE and CS9/PD3EM, respectively, from Madeira Island (AF-014) between October 25th and November 2nd.

Both operators have been on this island before (17th trip for Helmut).

Activity will be on various HF bands, including 60m, and an entry in the CQWW DX SSB Contest (October 30-31st) using the callsign CQ3W (possibly CR3A).

QSL CQ3W via ClubLog or LoTW. QSL CT9/DF7EE via ClubLog. QSL CS9/PD3EM via PD3EM, direct or by the Bureau.

RSGB release membership totals

The RSGB have released their membership figures for 2018, 2019, 2020 and up to July 2021

The information appears in RSGB's submission to IARU-R3 Conference, held September 20-23.

Dec-2018 Total members 20972 of which 2086 Overseas

Dec-2019 Total members 20885 of which 2166 Overseas

Dec-2020 Total members 21742 of which 2064 Overseas

July-2021 Total members 22022 of which 2042 Overseas

To read the full RSGB report look for "038 RSGB Report for IARU-R3.docx" under Input documents on the Conference Documents page which is at

:https://iarur3conf2021.org/documents/

GENESIS ham satellites among payloads lost in launch failure

The ARRL report the GENESIS-L and GENESIS-N ham radio satellites were among several carrying amateur radio payloads lost following the failure of the Firefly Alpha rocket during its first launch on September 2 from the Vandenberg Space Force Base in California. An anomaly occurred about 2 minutes into the mission, causing controllers to destroy the launcher in flight. The anomaly has yet to be explained.

This was sad news for AMSAT-EA (Spain), as GENESIS-L and GENESIS-N were the first satellites they had built themselves.

According to the AMSAT-EA website, the GENESIS satellites were destroyed after the Firefly Alpha vehicle presented an anomaly as it hit a velocity of Mach 1 and reached Max Q, a point of maximum aerodynamic pressure on the vehicle. The launch had been halted a few seconds before takeoff, but the countdown was subsequently resumed.

GENESIS-L and GENESIS-N were to conduct a series of telecommunications-related experiments, while a ground-station analysis of the received signals would try to attain Doppler variations in order to perform orbit determination and satellite identification from radio amateur stations around the world.

Also lost in the launch failure were the Serenity, Hiapo, the Cresst Dream Comet, and QUBIK-1 and QUBIK-2 satellites, and Spinnaker-3/Firefly Capsule 1. All were designed to use amateur radio frequencies for telemetry and/or communication.

Serenity, a 3U CubeSat, was developed by Teachers in Space (TIS) to provide low-cost opportunities to test educational experiments in space. TIS has previously guided high schools and other academic institutions in developing and flying sub-orbital experiments using high-altitude balloons, stratospheric gliders, and rockets. This was the first orbital satellite mission for TIS. Serenity carried a suite of data sensors and a camera to send data back to Earth using amateur frequencies.

Hiapo was an educational 1U CubeSat developed by the Hawaii Science and Technology Museum (HSTM). The Hiapo project was intended to provide hands-on STEM curriculum for Hawaii students in grades K – 12. Part of this curriculum involved obtaining data about solar flares, solar particle events, and disturbances in Earth's magnetic field. Data would be available for amateur operators to download directly from the satellite.

The Cresst Dream Comet was a 3U CubeSat developed by the University of Cambridge as a small satellite for technology demonstrations.

QUBIK-1 and QUBIK-2 were picosatellites developed by the Libre Space Foundation, a nonprofit association developing PocketQube picosatellite technology. They were built following the 1P PocketQube form factor. The mission of these satellites was similar to that of the GENESIS-L and GENESIS-N satellites.

Spinnaker-3 was a collaboration between the Cal Poly CubeSat Laboratory, Purdue University, and NASA. It was designed to provide rapid de-orbit capability for the second stage of Firefly Alpha's launch vehicle, using frequency shift keying (FSK) on 70 centimeters for communications. Firefly Capsule 1 consisted of nontechnical items from around the world, including photos, artwork, and books.

Source: http://www.arrl.org/news/genesis-ham-satellites-among-payloads-lost-in-launch-failure

YOUR COMMITTEE

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