The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

Ocober2022

West Coast Road Trip Edition

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This Month's Meeting:

Wednesday 5Th of October will the next general meeting for 2022.

Following General Business, there will be a Lighthouse weekend report by ZL1DK +as well as a Conference Report and WRC Rally information

Remember, if you're not there you are missing one of the most social aspects of the club. If transport is a problem, let the committee members know, and we may be able to assist with arranging a ride for you.

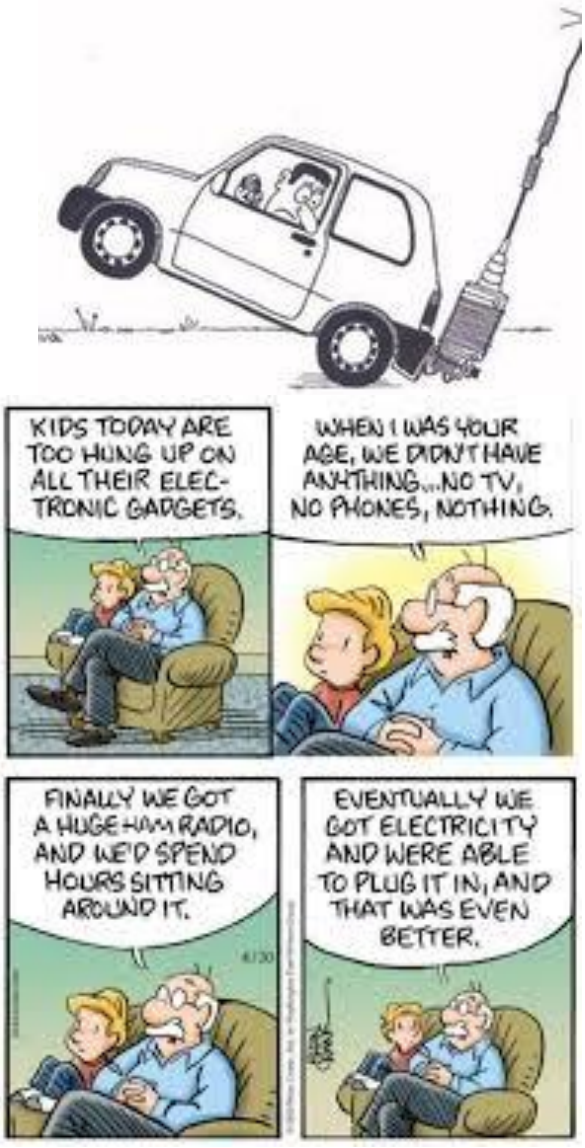
CLUB ACTIVITY:

Another 2 new members Sandi ZL4JET was welcomed last month, and now Pip ZL4SKY has also joined the ranks, Nice to have some new YL's so listens out over the next few weeks, as they log those first important 50 contacts, and become familiar with making contacts over the three months so they will be ready to work the HF bands with confidence.

Hopefully we will be able to run some more Ham Crams this year.

OCEANIA DX CONTEST

The Oceania DX Contests are coming up with the SSB Contest on 1/2 October and CW the following weekend, 8/9 October. Each contest runs for 24 hours and begins at 0600z (7pm NZDT).The beams of the world will be pointed at Oceania so this is a great time to get on the air and hand out a few contacts. You may work some interesting DX!



DX CALENDAR OCTOBER 2022

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
VP9/SP9FIH				JW7XK JW6VM JW9DL JW5X								VP2M																PJ4K		
VP9/DL1YAF							5R8FG																				TO5A		
	V47JA																										J28MD		
										5R8WP 5R8WG 5R8MM 5R8CG														VK9CM VK9C				
				D60AE																					V48DM				
									TO2DL															P29RO				
TX7G																						V47T						
VK0MQ																					PJ7PL							
	8Q7TD																		VP5DX										
																		7Q6M											
															FO/F6BCW														
																FG4KH													
									TY0RU																					
JX/LB4MI																													
	A35GC																												
RI1ANU																													
VQ9SC																													
DX0NE																													
FH4VVK																													
JG8NQJ/JD1																													
JI3DST/5 JS6RRR/5																													
FT4XW																													

FEATURED EXPEDITION:

A35GC Tonga

A35GC Team will be active from Tonga, 2 - 20 November 2022.
Team - LZ1GC, LZ1PM.

They will operate on 160 - 6m.

QSL via LZ1GC, LOTW,
ClubLog OQRS.
QTH - Nuku'alofa, Tongatapu Islands, IOTA OC-049.

UPCOMING CONTESTS

Check for updates and a downloadable PDF version online at **www.arrl.org/contest-calendar**.
Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish Date-Time		Date-Time		Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	0600	2	0559	3.5-28	Worked All Provinces of China DX Contest	CW	RS(T), Chinese province or serial	www.mulandxc.com
1	0600	2	0600	1.8-28	Oceania DX Contest, Phone	Ph	RS, serial	www.oceaniadxcontest.com
1	1200	2	1159	1.8-28	Russian WW Digital Contest	Dg	RST(Q), oblast code or serial	www.rdrclub.ru
1	1400	2	1400	See rules	IARU Region 1 UHF Microwaves Contest	CW,Ph,Dg	RS(T), serial, 6-char grid square	www.iaru-r1.org
1	1600	2	1100	3.5,7	International HELL-Contest	Hell	RST, serial	www.darc.de
1	1600	2	2200	1.8-28	California QSO Party	CW,Ph	Serial, CA county or SPC	www.cqp.org/Rules.html
1	1800	2	1800	No WARC	SKCC QSO Party	CW	RST, SPC, name, 4-char grid square	www.skccgroup.com
2	0600	2	0900	3.5	UBA ON Contest, SSB	Ph	RS, serial, ON section (if ON)	www.uba.be
2	0600	2	1800	3.5-28	RSGB DX Contest	CW,Ph	RS(T), serial	www.rsgbcc.org
2	2200	2	2359	3.5-14	Peanut Power QRP Sprint	CW,Ph	RS(T), SPC, peanut no. or power	www.nogaqrp.org
3	1900	3	2030	3.5	RSGB 80-Meter Autumn Series, CW	CW	RST, serial	www.rsgbcc.org/hf
4	0100	4	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
5	1900	5	2300	432	432 MHz Fall Sprint	CW,Ph,Dg	4-char grid square	svhfs.org
5	2000	5	2100	3.5	UKEICC 80-Meter Contest	Ph	6-char grid square	www.ukeicc.com
6	1700	6	1900	3.5	SARL 80-Meter QSO Party	Ph	RS, serial, grid square or QTH	www.sarl.org.za
6	1700	6	2100	28	NRAU 10-Meter Activity Contest	CW,Ph,Dg	RS(T), 6-char grid square	nrrlcontest.no
6	1900	6	2100	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8	0000	9	1559	3.5-28	Makrothen RTTY Contest	Dg	4-char grid square	www.pl259.org
8	0000	8	2359	1.8-28	QRP ARCI Fall QSO Party	CW	RST, SPC, mbr or power	qrparci.org
8	0300	9	2100	1.8-28, V/U	Nevada QSO Party	CW,Ph,Dg	RS(T), NV county or ARRL/RAC section	nvqso.com
8	0600	9	0600	1.8-28	Oceania DX Contest, CW	CW	RST, serial	www.oceaniadxcontest.com
8	0800	8	1400	902 and above	Microwave Fall Sprint	CW,Ph,Dg	6-char grid square	svhfs.org
8	1200	9	1200	3.5-28	Scandinavian Activity Contest, SSB	Ph	RST, serial	www.sactest.net
8	1200	9	2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8	1500	9	0500	1.8-28	Arizona QSO Party	CW,Ph	RS(T), AZ county, or SPC	www.azqp.org
8	1600	9	2200	No WARC	Pennsylvania QSO Party	CW,Ph	Serial, PA county, or ARRL/RAC section	paqso.org
8	1800	9	1800	1.8-28, 50,144	South Dakota QSO Party	CW,Ph,Dg	RS(T), SD county, or SPC	www.sdqsoparty.com
8	2000	9	2000	1.8	PODXS 070 Club 160-Meter Great Pumpkin Sprint	Dg	RST, SPC	www.podxs070.com
9	0600	9	0900	3.5	UBA ON Contest, CW	CW	RST, serial, ON section (if ON)	www.uba.be
10	0000	10	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW,Ph	RST, SPC, mbr or power	www.4sqrp.com
10	0001	10	2359	28	10-10 International 10-10 Day Sprint	CW,Ph,Dg	Name, mbr or "0," SPC	www.ten-ten.org
12	0030	12	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
12	1900	12	2030	3.5	RSGB 80-Meter Autumn Series, Data	Dg	RST, serial	www.rsgbcc.org/hf
15	0000	16	2359	50-1296	ARRL EME Contest	CW,Ph,Dg	Signal report	www.arrl.org/eme-contest
15	0000	16	2359	3.5-28	JARTS WW RTTY Contest	Dg	RST, age of operator	jarts.jp/rules2022.html
15	0001	16	2359	28	10-10 International Fall Contest, CW	CW	Name, mbr or "0," SPC	www.ten-ten.org
15	1400	16	0200	No WARC	New York QSO Party	CW,Ph,Dg	RS(T), NY county or SPC	www.nyqp.org
15	1500	16	1459	3.5-28	Worked All Germany Contest	CW,Ph	RS(T), DOK or "NM" or serial	www.darc.de
15	2000	15	2359	1.8-7,21, 28,50	Feld Hell Sprint	Dg	RST, mbr, SPC, grid square	sites.google.com/site/feldhellclub/
15	2130	15	2230	7	Argentina National 7 MHz Contest	Ph	RS, 2-digit year first licensed	www.lu4aa.org
16	0000	16	0200	14,21	Asia-Pacific Fall Sprint, CW	CW	RST, serial	jsfc.org
16	0700	16	1000	144	UBA ON Contest, 2 Meters	CW,Ph	RS(T), serial, ON section (if ON)	www.uba.be
16	1700	17	0100	1.8-28, 50,144	Illinois QSO Party	CW,Ph,Dg	RS(T), IL county or SPC	w9awe.org/ilqp
16	1900	16	2030	3.5	RSGB RoLo CW	CW	RST, previous 6-char grid square recd	www.rsgbcc.org/hf
16	2300	17	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
17	1300	21	2359	No WARC	ARRL School Club Roundup	CW,Ph,Dg	RS(T), class (I/C/S), SPC	www.arrl.org/school-club-roundup
17	1900	17	2030	3.5-14	RSGB FT4 Contest	FT4	4-char grid square	www.rsgbcc.org/hf
20	1900	20	2000	3.5-14	NTC QSO Party	CW	NTC member: RST, mbr; non-member: RST, "NM," less than 25 WPM	qsl.net/ntc/party.html
21	1700	23	0100	1.8-28, V/U	Telephone Pioneers QSO Party	CW,Ph,Dg	Chapter nr or RS(T), name	www.tpqso.com
22	0000	23	2359	1.8-28	YBDXPI FT8 Contest	FT8	4-char grid square	contest.ybdxpi.net/rules
22	1200	23	1200	3.5-28	UK/EI DX Contest, SSB	Ph	RS, serial, district code, or serial	www.ukeicc.com/dx-contest-rules.php
22	1400	24	0200	No WARC	YLRL DX/NA YL Anniversary Contest	CW,Ph,Dg	Serial, RS(T), ARRL section or PC	ylrl.net/contests
22	1500	23	1500	1.8	Stew Perry Topband Challenge	CW	4-char grid square	www.kkn.net/stew
23	0000	23	0400	3.5-14	North American SSB Sprint Contest	Ph	Other's call, your call, serial, name, SPC	ssbsprint.com/rules
23	1300	26	0700	1.8-28, 50,144	Classic Exchange, CW	CW	Name, RST, SPC, radio model	www.classicexchange.org
26	0000	26	0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
26	2000	26	2100	3.5	UKEICC 80-Meter Contest	CW	6-char grid square	www.ukeicc.com
27	1900	27	2030	3.5	RSGB 80-Meter Autumn Series, SSB	Ph	RS, serial	www.rsgbcc.org/hf
28	1600	28	2359	3.5-14,21	Zombie Shuffle	CW	RS(T), SPC, Zombie nr or area code, name	www.zianet.com/qrp
29	0000	30	2359	1.8-28	CQ Worldwide DX Contest, SSB	Ph	RS, CQ Zone	www.cqww.com

All dates and times are in UTC,

RAMBLINGS FROM THE EDITORS DESK

If the newsletter this month seem a little shorter and less radio related, its mostly because I am away in the South Island at this time, and have been travelling in a motorhome with reduced contact with the outside world. Yet in spite of this, I have been watching with interest the roll-out of Artemis 1 (back to the Moon) it's, many, issues, and finally it's roll back into the hanger, for some serious servicing (I Hope), and the DART mission to see it it's possible to change the path of an asteroid.

While TV reception has been non existent (I didn't splash out for a sat dish) and the internet patchy, the coverage of cellular signals has kept me in touch with the key events, which sadly included the death of the Queen, and the Installation of Charles as our new King. Having had the pleasure of meeting them both in official (and less official) capacities over the years, I could not help feeling some of the sense of loss that the family must have experienced over this very public time.

Our new grandson entered the world one day later than planned, with both Mum and Baby did well, My son is happily moving to his new role as a dad, and find myself enjoying the benefits of being a Granddad again, especially when you get to hand them back to the parents.

As I have often warned my children, my grandparenting philosophy is very simple, I will provide a lot of sugar, and then send them home. After all, it's what our parents did with our children, so I have a tradition to maintain.

Sadly, my intentions to activate parks was unsuccessful due to a major design flaw in the HF antenna arrangement on the motorhome, and a distinct lack of trees to anchor my antenna to when at a beach. Hopefully I will be able to find a solution to this problem that does not require materials I sadly left behind in Auckland.

But the west coast of the South Island has been incredible, and it's been heartening to see a small number of other tourists making the effort to see this part of the country. If you have not yet been, you are missing an experience. Sadly, we have been unable to get close to the glaciers, as many of the tracks have been washed away, and the walkways closed for safety, but even so the glaciers have been a sight to behold, and the blowholes at pancake rocks provided many surprises

The sun has continued to also provide many surprises with X class flares and CME's, sadly this has not yet resulted in an aroura display that we have been able to observe, But Lake Tekapo made up for this with a view of the night sky, unmatched by any other, Its amazing how much of the night sky is lost in the lights of the Auckland sky

The radio emissions , CME's and Flares have however produced may radio blackouts, and while some nights we have been able to listen to many strong signals (such as the AM nets on Friday nights), we have also had situations where the bands have been totally silent, especially on the dayside, and into the grey zone, as the solar effects have wiped out any hope of propagation.

So what have I learned while travelling?

1. Artemis is a monster that really should not exist.

Let's see if I can explain why. There will be only 3 Space Launch System (SLS) rockets ever built, as they are made from left over remnants of the space shuttle programme, and very little of them is actually new, Just all reconfigured to make a rocket. In spite of this, it is the most expensive item of space hardware ever made, with over 100 billion dollars (NZ) already spent on the programme. The work was farmed out across America, to ensure every state got some of the contracts, but the main parts were all built by other nations. It really was a last chance for Boeing to show that they could still make a rocket, and like the Starliner programme, it has not gone well for them

The SLS uses liquid hydrogen and liquid oxygen systems, that had been abandoned in all modern rockets, as the systems are too prone to problems. This alone has cost NASA no less than 3 launch attempts to date

Every part of the SLS is a 1 time rocket, That is no parts are reusable, unlike every other system where NASA requires re-use, the SLS is One rocket per trip. They cannot be recovered or reused.

The Artemis programme requires SpaceX to have the Starliner Heavy operational before flight 3. As the return to the moon is only possible if SpaceX have already delivered materials and cargo to the moon, as well as a system to move between gateway and the moon. In a sense Starship (which has yet to fly) will be the lander.

The first SpaceX Starliner will not even return to earth, it will be a one trip rocket, there is even some discussion as to using the body as an extra part of the Gateway habitation station during its construction as extra living space.

In short it's a very strange programme designed to put a space station around the moon as a staging post for later missions.

While I want to see it work, I have to wonder what NASA was thinking when the designed this plan.

2. **We really are still just figuring out bigger and better ways to hit things with bigger and better sticks and rocks.**

With a war in Ukraine, that is looking more and more like the next Korea/Vietnam showdown between Russia and the US the arms race is back is back on, and there is nothing about this that seems to make the world any safer, in fact it seems to making the doomsday clock predictions of 100 seconds to midnight, more and more accurate.

Meanwhile America is ready to deploy weapons systems that even it's allies cannot access, to test them against Russian equipment, while Russia is now starting to also dig deeper into it's arsenal of hypersonic and possibly even nuclear weapons.

I wonder if the UN had chosen a diplomatic solution when the tensions and rising nationalism in different parts of Ukraine first broke out into riots and violence 8 years ago, would we now be facing this situation, which seems to be turning into a no-win situation that may well become a full scale war in eastern Europe.

We are still petty minded parochial and silly when we take sides based on the propaganda of any side, and nothing is ever as clear cut as it first seems.

3. **We know so much but understand so little.**

There is a small town in the south called Duntroon, and hidden within it there is a eco-park called the vanished world. It's based on the work of private citizens, farmers, Amateur palaeontologists, and also the scientific community. They have already confirmed the existence of many previously unknown species of penguin (including some that were taller than a man) , and are on their way to becoming a world heritage park. With a number of sites that allow, and encourage, the amateur to become a fossil hunter and to help re-write New Zealand's Early history.

While fossicking among the rivers Timothy even found his very own fossil, which he has been allowed to keep, and this has encouraged him to learn more about both fossils and fossil hunting.

Our early history is based on guesswork and a few records, if we waited for the experts to work it out we would be waiting, or would be on the wrong track, but thanks to the work of passionate individuals, the early records of NZ are being exposed and examined, and the textbooks are being re-written.

If you have a passion for any topic, then there is much you can learn and discover.

And this of course applies to radio too.

It doesn't matter what you are passionate about, Green Radios, Modern Digital and hotspots, Valve radio restoration, antenna design, portable operation or having the ultimate ham shack.

It's not what you have, or what you have learnt, it's what you choose to do with what you have, its about trying (and sometime failing) and then keeping on with a passion to do it, and make it work.

We are a strange collection of unique individuals, who will never agree on much of what we do, yet under the umbrella of "Ham Radio" we share a common interest that can inspire others and encourage them to do more with what they have

This became very clear when I put out a call on a Christchurch repeater, and had a couple of QSO's with some locals, One of whom saw I was from Papakura, and asked me to pass on regards to a member of the club who had encouraged him into Ham radio

His passion for the hobby, had ignited a fire in another, and this enthusiasm had taken root and helped another to find pleasure in the hobby.

Maybe later. I will figure out a working solution for my HF (I have some ideas that might work) and get HF in the camper as it should be, but for now, I'll enjoy my journeys and learn what I can while I'm here, then if time permits, I'll have another go at some parks, and maybe even get an activation, But if I don't at least I will be able to say I tried.

Maybe it's the west coast air, or the rugged scenery, or maybe the locals, but being out here has made me realise the potential of the number 8 wire mentality, over the professional engineered solution.

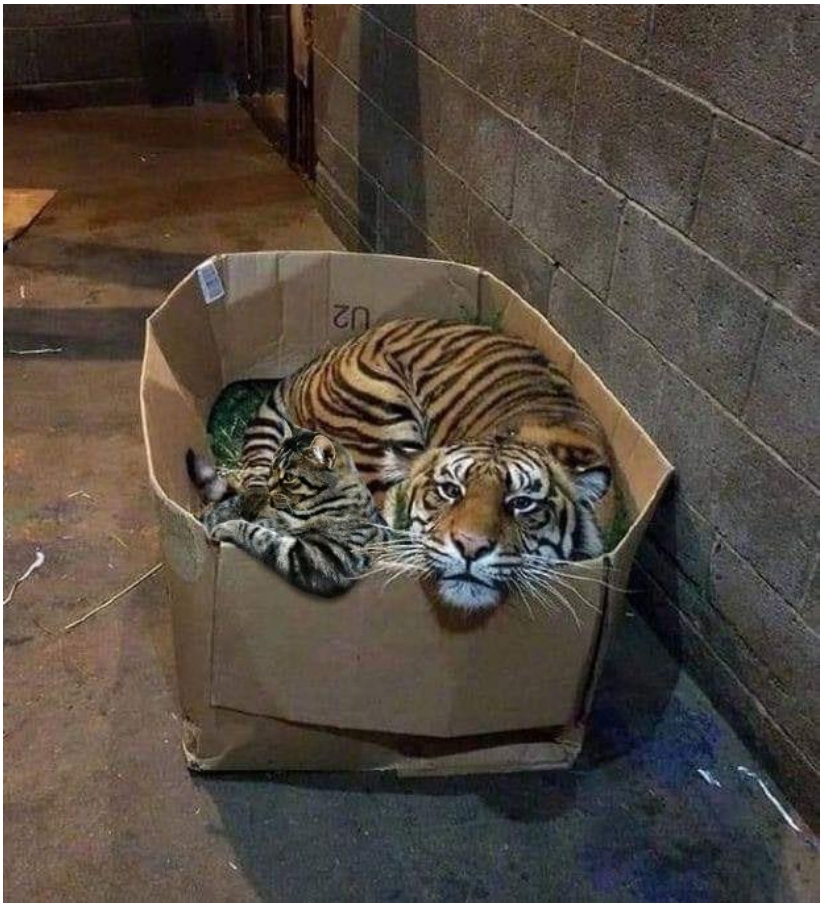
After all, what's the worst that can happen

See you all again soon. Till then, 73 and have a great October

Gavin (ZL1NUX)

WHY DO CATS LOVE CARDBOARD BOXES?

Anyone who has spent time in the company of a cat will know that as soon as a cardboard box is placed on the floor it will be only a matter of time until it is occupied by a cat . Surprisingly, the size of the cat is of little consequence



Animal behavioural psychologists, Yes there is such a thing, recently investigated the reasons for this, and decided that the most likely reasons was partially that the box itself is a source of new smells that the cat will want to rub against, and will need to investigate in order to satisfy themselves that the new item not a potential threat.

But having determined that there is no threat, the cat, which is both predator and prey, will then determine that the box is likely to be a safe place to lay in wait with a goal of pouncing upon unsuspecting prey (or cat toys) should they pass by. The box providing a safe lair in which to lay low

I am unsure if its sadder that this is a serious study, or if the fascination with cats in boxes is such that we all took the time to read this, but either way it's nice to know that the cats internal programming is able to be understood so easily by experts.

I guess those same experts might next be willing to explain what every parent also knows about spending time and money on the latest new toy, only to have the child spend the rest of the day playing with the cardboard box it came in.

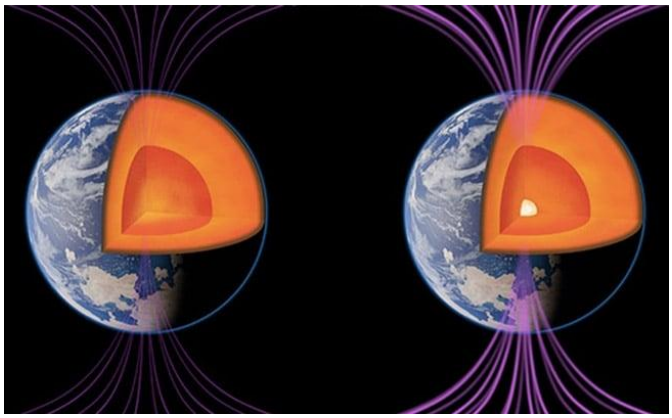
Same reasons maybe?

Or is there just something magical about a cardboard box that no expert really understands?

SCIENTISTS DISCOVER MASSIVE "OCEAN" NEAR EARTH'S CORE

The study confirmed something that it was only a theory, namely that ocean water accompanies subducting slabs and thus enters the transition zone.

Scientists have discovered a reservoir of water three times the volume of all the oceans beneath the Earth's surface, according to an international study. The water has been found between the transition zone of the Earth's upper and lower mantle. The research team analysed a rate diamond formed 660 meters below the Earth's surface using techniques including Raman spectroscopy and FTIR spectrometry.



The study confirmed something that for a long time it was just a theory, namely that ocean water accompanies subducting slabs and thus enters the transition zone. This means that our planet's water cycle includes the Earth's interior. It has long been known that water could be drawn into the transition zone along with mantle, but it was not known how much there would be, or how it would behave under the pressures and temperatures of a subduction zone

The research team analysed a diamond from Botswana, Africa. It was formed at a depth of 660 kilometres, right at the interface between the transition zone and the lower mantle, where ringwoodite is the prevailing mineral. Diamonds from this region are very rare, even among the rare diamonds of super-deep origin, which account for only one per cent of diamonds. The analyses revealed that the stone contains numerous ringwoodite inclusions -- which exhibit a high water content. Furthermore, the research group was able to determine the chemical composition of the stone. It was almost exactly the same as that of virtually every fragment of mantle rock found in basalts anywhere in the world. This showed that the diamond definitely came from a normal piece of the Earth's mantle. In this study, they have demonstrated that the transition zone is not a dry sponge, but holds considerable quantities of water, This also brings us one step closer to Jules Verne's idea of an ocean inside the Earth.

Or perhaps, we have the age-old answer to where did the Floodwaters go after the Worldwide flood? We know Mars had global floods, even though we haven't found any of the water there yet, but earth, which has plenty of water, and evidence of huge floods in may parts of the world, but a global flood would need 2-3 time the current volume of water found in oceans and ice. Maybe we just needed to look beneath our feet.

Either way, while some look at a diamond only as a fashion statement, it's amazing to think how they can also give us insights into how much we still do know about the planet we walk on every day.

IT'S OFFICIAL! COFFEE IS GOOD FOR YOU – JUST LIKE RED WINE, DARK CHOCOLATE, BEER ...

Another day, another study suggesting a little of what you fancy does you good. But almost half a million people took part in this one

Research has found that drinking two to three cups of coffee – ground, instant, decaffeinated – could reduce the risk of cardiovascular disease and so be linked to a longer life.

The Study, published in the European Journal of Preventive Cardiology, authored by Prof Peter Kistler of the Baker Heart and Diabetes Institute surveyed 449,563 aged between 40 and 69 completed a questionnaire, with a follow-up 12 and a half years later The found, that 27,809 (6.2%) had died during that period. The interesting bit is that compared with not drinking coffee, drinking two or three cups a day was associated with a 27%, 14% and 11% lower likelihood of death during the period of the study for ground, decaf and instant respectively.

Caffeine, come home! Kistler says it's probably one of the many other biological components that is responsible for the positive relationship between coffee drinking, cardiovascular disease and survival.

Hang on, though: wasn't it something else five minutes ago? You're probably thinking of the study that found that drinking two pints of beer a day can slash the risk of dementia by a third.

Beer! I didn't even know about that. I was thinking of red wine. Ah, yes, an old favourite, with numerous and frequent studies finding health benefits, including boosting heart, gut and brain health. All of which come with the usual caveats about the dangers of overdoing it.

Also chocolate? Yeah, but not so much Milkybars, more dark chocolate – nutritious and rich in antioxidants.

It's almost like the men and women in white coats are doing studies into all the stuff we like but think is unhealthy and then finding out, hey, it's not so bad after all – it might even be good for you. OK, but who's complaining? Until someone claims that a child's metabolic health can be improved with a light to moderate meth habit …

So say: "Cappuccino please, with a sprinkle of dark chocolate for extra longevity to go.". and at night a glass of red wine and maybe a pint of beer while you're at it. After all, better safe than sorry."

DINOSAURS WERE ALREADY ON THEIR WAY OUT BEFORE ASTEROID HIT, ANOTHER STUDY FINDS

The demise of the dinosaurs has long captivated palaeontologists. Their mass extinction after a fiery meteorite pummelled Earth some 66 million years ago, as volcanoes erupted and global temperatures rose and fell, was a tumultuous end to the reign of these once-dominant beasts.

But now another study suggests dinosaurs were already on their way out millions of years before the fated meteorite hit, according to an analysis of over 1,000 fossilized eggshells unearthed in central China.

"Dinosaurs went extinct gradually over millions of years, instead of coming to an abrupt end from sudden disasters," study author Qiang Wang of the Chinese Academy of Sciences told the South China Morning Post.

Expect those conclusions to be tested, though. The study weighs into a long and see-sawing debate amongst paleontologists about whether non-avian dinosaurs met an abrupt end or if they were already teetering on the edge of extinction before a 10-kilometer-wide asteroid sealed their fate.

The new research, from a team of geologists and paleontologists working in China, suggests dinosaur biodiversity was fading at least two million years before dinosaurs went extinct, at the end of the Cretaceous, leaving birds as their only living descendants.

Its conclusions are based on a collection of egg fossils, including several complete and incomplete dinosaur eggs, preserved in 150-meter-thick layers of rock that were deposited between 68.2 and 66.4 million years ago, right before the curtain came down on the dinosaurs.

The Shanyang Basin, where the egg fossils were found, is home to one of the most abundant dinosaur records from the late Cretaceous period. And yet the researchers only found three taxa of dinosaurs represented in the fossilized eggshells – a clear drop in biodiversity compared to older fossil records.

This decline in variation, the researchers suspect, might have weakened the dinosaurs' collective ability to recover from the impact of the Chicxulub asteroid that struck modern-day Mexico or adapt to the turbulent environmental conditions of the time. With fewer options in their evolutionary playbook, they were snookered.

"Our results support a long-term decline in global dinosaur biodiversity prior to 66 million years ago, which likely set the stage for the end-Cretaceous non-avian dinosaur mass extinction," China University of Geosciences researcher Fei Han and colleagues write in their published paper.

The study is not alone, with many palaeontologists , Like Bob Baker of Utah who point to the problems with the single asteroid mass extinction event including how Frogs, which are very sensitive to changes in the ecosystem surviving, while the dinosaurs died out.

Despite their claims, the team rightly notes that the extinction of the dinosaurs remains contested for a host of reasons, such as "sampling biases in the fossil record, differences in the analytical approaches used, and the rarity of high-precision geochronological dating of dinosaur fossils."

In their work, Han and colleagues used a suite of techniques to stratify thousands of rock samples encasing the fossilized eggshells, estimate the age of those samples, and construct a timeline with that data that had a resolution of 100,000 years.

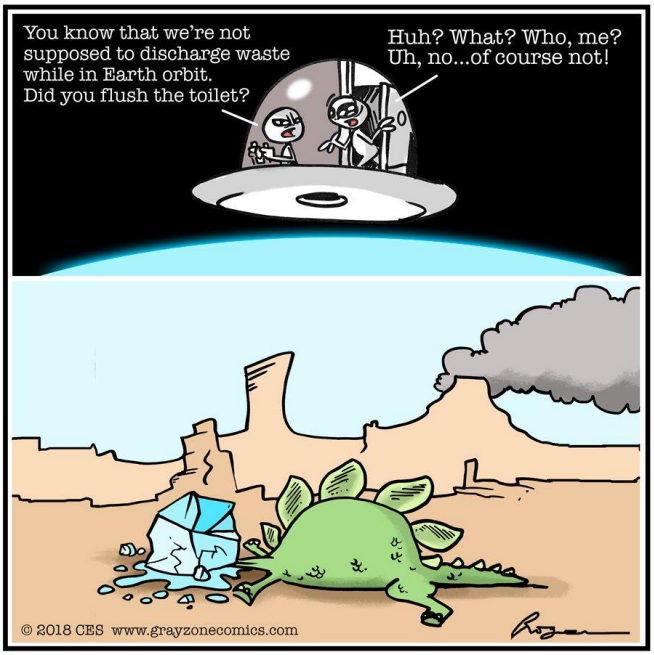
Two of the three dinosaur eggs 'oospecies' (a species category for dinosaurs, when you just have eggs) identified in the mix were from a group of toothless, parrot-like dinosaurs called oviraptors, with the third group of egg-laying dinosaurs identified as herbivorous duck-billed hadrosaurids.

The low species diversity that the researchers found matches with skeletal remains of ancient dinosaurs also uncovered in the Shanyang Basin, and is comparable to other fossil deposits in southern and eastern China, as well as some bonebeds in North America that also hint at declining dinosaur diversity during the same period.

That all "points to a lowered diversity and overall decline among dinosaurs on a global scale," Han and colleagues argue, suggesting the decline might have resulted from global climate fluctuations and volcanic eruptions.

Other studies that have likewise suggested dinosaurs were prone to extinction have suggested that their diversity may have started dwindling as much as 10 million years before the meteorite smashed into Earth.

However, past studies have found otherwise. One recent, far-reaching analysis simulating dinosaur speciation – the rate at which new species appear – found that less than 20 percent of dinosaurs were in terminal decline before the asteroid impact, while other species were thriving.



Certainly not an easy task, but one that might help finally settle what happened in the fading light of the dinosaurs' reign.

"Our study in Asia of abundant and geochronologically dated fossils is a major step in that direction," the researchers write.

The study was published in PNAS.

Has NASA redirected an asteroid with a "DART"?

After 10 months flying in space, NASA's Double Asteroid Redirection Test (DART) – the world's first planetary defense technology demonstration – successfully impacted its asteroid target on Monday, the agency's first attempt to move an asteroid in space.

Mission control at the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland, announced the successful impact at 7:14 p.m. EDT.

As a part of NASA's overall planetary defence strategy, DART's impact with the asteroid Dimorphos demonstrates a viable mitigation technique for protecting the planet from an Earth-bound asteroid or Comet, if one were discovered.

DART targeted the asteroid moonlet Dimorphos, a small body just 530 feet (160 meters) in diameter. It orbits a larger, 2,560-foot (780-meter) asteroid called Didymos. Neither asteroid poses a threat to Earth.

The mission's one-way trip confirmed NASA can successfully navigate a spacecraft to intentionally collide with an asteroid to deflect it, a technique known as kinetic impact.

The investigation team will now observe Dimorphos using ground-based telescopes to confirm that DART's impact altered the asteroid's orbit around Didymos. Researchers expect the impact to shorten Dimorphos' orbit by about 1%, or roughly 10 minutes; precisely measuring how much the asteroid was deflected is one of the primary purposes of the full-scale test.

The spacecraft's sole instrument, the Didymos Reconnaissance and Asteroid Camera for Optical navigation (DRACO), together with a sophisticated guidance, navigation and control system that works in tandem with Small-body Maneuvering Autonomous Real Time Navigation (SMART Nav) algorithms, enabled DART to identify and distinguish between the two asteroids, targeting the smaller body.

These systems guided the 1,260-pound (570-kilogram) box-shaped spacecraft through the final 56,000 miles (90,000 kilometers) of space into Dimorphos, intentionally crashing into it at roughly 14,000 miles (22,530 kilometers) per hour to slightly slow the asteroid's orbital speed. DRACO's final images, obtained by the spacecraft seconds before impact, revealed the surface of Dimorphos in close-up detail.

Fifteen days before impact, DART's CubeSat companion Light Italian CubeSat for Imaging of Asteroids (LICIACube), provided by the Italian Space Agency, deployed from the spacecraft to capture images of DART's impact and of the asteroid's resulting cloud of ejected matter. In tandem with the images returned by DRACO, LICIACube's images are intended to provide a view of the collision's effects to help researchers better characterize the effectiveness of kinetic impact in deflecting an asteroid. Because LICIACube doesn't carry a large antenna, images will be downlinked to Earth one by one in the coming weeks.

The first images on the right from LICIACube show a large amount of material being ejected from Dimorphos immediately aftey impact

Roughly four years from now, the European Space Agency's Hera project will conduct detailed surveys of both Dimorphos and Didymos, with a particular focus on the crater left by DART's collision and a precise measurement of Dimorphos' mass.

Ground Based astronomers have already confirmed that during the impact the brightness of the asteroid pair increased considerably, and the images changed from a normal steroid view to a an image thet more closely resembled a comet.

Johns Hopkins APL manages the DART mission for NASA's Planetary Defense Coordination Office as a project of the agency's Planetary Missions Program Office, and supplied much of the information above above.

So now we wait to see if it worked

SOME NETS – FOR WHEN YOU ARE LOOKING FOR SOME COMPANY

Day	Time (Local)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	09:00	3.700	Bch 10. Franklin.
	09:15	3.755	Bch 65. Papakura.
	19:00	146.625	YL Net
	20:00	3.710	Bch 42. Titahi Bay
	21:30	3.595	Duran WIA Net.
Monday	19:30	3.757	Bch 12. Hamilton
	20.00	3.540	CW Practice Net
	20:00	3.605	Br 80. Hibiscus Coast
	20:00	Nat System	W.A.R.O
	20:30	3.870	O.T.C (Old Timers Club)
Tuesday	09:00	7.096	Ex Post Office Techs
	21:00	1.850	160m Net _ Ron ZL4JMF
	19:30	3.690	QRP ZL2BH
	20:00	3.581	CW improvers Net
Wednesday	11:30	3.850	SPAM Net
	20:00	3.660	Geek Net
	20:00	3.645	Bch 02. Auckland
	20:00	3.745	Bch 84. Bay of Islands
	20:30	146.525	W.R.S.C
Thursday	09:00	7.096	Ex Post Office Techs
	19:30	3.690	QRP ZL2BH
	20:00	3.540	CW Practice Net
	20:00	3.615	Bch 89. REG Net
	20:30	3.696	ZL1OA
	20:30	3.666	LF Net ZL2CA
	20:00	3.690	ZL QRP SSB Net
Friday	20:30	3.850	SPAM (AM Mode)
	20:30	3.650	W.S.R.C.
	20:30	3.560	Digital Modes Net
Saturday	10:30	28.530	10-10 Down Under
	19:30	3.650	Christian Fellowship
	20:00	3.760	???
	20:30	3.600	Ch 62. Reefton/Buller
Daily or Other	07:30	3.696	ZL2OA
	08:30	3.730	ZL3RP
	15:00	14.300	Pacific Seafarers
	17:30	3.760	Home Brew
	05:00 Zulu	14.183	ANZA DX Net
	18:00	7.115	VK7OB
	19:30	3.720	ZL1MO
	18:30	3.766	ZL3LE
	08:30/20:00	3.730	ZL3RP
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA
	21.00	3.535	New Zealand Net (CW)

This is designed to be a living list, Please update whenever you are able:

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Committee	ZL1DK	David Karrasch	021 560 180
	ZL1IRC	Ian Clifford	021 082 48400
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Newsletter.	Contact:	zl1nux@outlook.com	

Our newsletter is published monthly and normally distributed just before the club meeting. Please forward articles etc to the editor Wednesday 1 week before the general meeting. Please notify any change of address. Including E-Mail Address to the secretary.

Meetings
General Meetings are held at the Clubrooms on the 1st Wednesday of each month, starting at 7.30 pm. Look at your calendar and mark these nights. The speaker follows the General Meeting.
Project Evenings are on the 4th Wednesday of each month.
Committee Meetings are held on the 3rd Wednesday of each month at 7.30 pm unless advised.
Activity Nights are held on the 2nd Wednesday starting at 7.30 pm.
AREC Meetings are on the 5th Wednesday night, also starting at 7.30 pm
AGM: Held in November

Subscription: Full membership and newsletter $25.00 Family Membership and newsletter $40.00
Bank Account number: 03-0399-0019896-00 Working Bees As required.
Branch 65 21 Award: For contacts with ZL1VK (5 Points) and 8 Papakura Radio Club Members (2 Points each) after January 2011. Total 21 Points. Cost $5-00. Certified list and $5-00 to Secretary, Papakura Radio Club. Address above.

ZL1VK Club Nets
146.900 MHz Sunday at 8.30 am. Controller ZL1NUX, Gavin Denby. If the repeater is not available, listen 146.475MHz simplex.
3.755 MHz Sunday at 9.15 am. Controller ZL1BNQ Richard Gamble. (Linked to 146.675 & 438.775)