

Richard Saunders talks to Professor. Colin Keay

Podcaster: Richard Saunders

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Description: Richard Saunders talks to Professor. Colin Keay about his life and research in astronomy.

Bio: The Skeptic Zone Podcast - The Podcast from Australia for Science and Reason, produced by Richard Saunders is Australia's leading skeptical podcast with reports from around the world.

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Transcript:

Richard Saunders

A life in Astronomy. Hello, this is Richard Saunders from Sydney Australia, producer of the Skeptic Zone Podcast at www.skepticzone.tv.

Today I'm going to speak With Professor Colin Keay, now retired in Sydney, about his life and work as an astronomer. Prof. Keay, originally from New Zealand, was a working astronomer in Australia, Canada, the United States, the United Kingdom and he even travelled to the then Soviet Union as a guest of the Soviet Academy of Sciences. I started off by asking Colin about his experiences with the very first satellite, Sputnik One.

Prof. Keay

Well a young lecturer from Scotland, Dick Anderson, he and I got together immediately we knew about Sputnik One and when word came through that it had been spotted, we immediately tried to determine the ground track of it to find out when it would be seen next and one thing lead to another and we started plotting where it was going be seen. And that lead to a couple of papers that were published in journals, which were the first two papers on observing a satellite.

Richard Saunders

Really? Oh of course it was the first satellite so that doesn't surprise me at all. That's very exciting, it must have been an exciting time.

Prof. Keay

Oh it was! I don't think I slept for two days.

Richard Saunders

I bet. Because we're all use to now going out to look at the night sky and we'll see satellites. I mean you can hardly miss them these days but it must have been quite exciting to see the very first one.

Prof. Keay

Yes in fact we were fooled the first time because it was actually the rocket we were seeing, not the satellite itself, but the satellite itself was visible at much the same time and people with the sharpest eyes spotted it as a tiny dot following the much bigger object which was the rocket that lunched it.

Richard Saunders

And that was in 1950...

Prof. Keay

Seven.

Richard Saunders

Thank you. I should know that off the top of my head.

Prof. Keay

October the 3rd.

Richard Saunders

1957. I wish I could have been there. It would have been an interesting time to be alive. Also, let me just quickly mention that you were part of the team to do infrared mapping of Jupiter. I'd like to know a little more about that.

Prof. Keay

Well that was when the meteor work I was doing was completed to the extent that we could with the facilities we had. And I was interested in branching out to another field of astronomy. And by great good fortune I was able to spend a sabbatical year with Professor Frank Lowe in Arizona who was regarded as the father of infrared astronomy.

And I worked for a year with Frank and he paid for me to go back for another further few months and we published the first infrared mapping of Jupiter to determine what temperatures where were and we found that the blue spots that had been seen in the Jovian atmosphere were actually clear spaces between the clouds of Hydrogen Disulfide and all the other nasties, ammonia and so on that comprised the atmosphere of Jupiter. And by great coincidence the Galileo probe plunged into the Jovian atmosphere and the scientists expected to get good composition results from it and found there wasn't much in the way of cloud composition. They discovered that they'd had fallen right through one of the spaces, which was a very chancy business. But ah, that was published in 1972. And one of the other things about it was that was that we were in a race with one of the Pioneer space probes and we beat them to it. Because they were able to examine Jupiter close up where as we were doing it from a zillion miles way. And it was rather interesting that the biggest kick that Frank Lowe got out of it was that we beat the boys with the 200 inch telescope, we had the NASA 61 inch telescope which was only a 5th of the size and yet we got in first. And it was almost 10 years before the Siding Spring telescope managed to get comparable infrared pictures which was rather gratifying to us because we did everything on a 'bare-bones' budget and it was really a 'Heath Robinson' approach that we adopted, but we succeeded.

Richard Saunders

Were you working in Arizona when the first moon landing was happening or was that another time?

Prof. Keay

That was earlier when I was doing graduate work in Toronto in Canada.

Richard Saunders

That must have been a very exciting time for astronomers.

Prof. Keay

It was. Gathered around the TV set, looking at the moon getting closer and closer and closer until 'splat' there was just nothing.

Richard Saunders

Just by coincidence we are recording this interview on the 9th (October) here in Australia and tonight at 10:30 Australian time, or Sydney time the probes' going be slamming into the moon. And speaking of the moon, I'd like to discuss with you the global radio transmission via the moon and why that failed.

Prof. Keay

Well that was an attempt by Jodrell Bank, Sir Bernard Lovell, with the new 250 foot radio telescope near Manchester at Jodrell Bank and we had an antenna which made it marginally possible, and so we had our antenna pointed at the moon as the moon was setting in the west and they had the big Jodrell Bank antenna pointing to the moon as it was rising in their east and at the time when the moon should have been visible from both locations to get a signal from one side of the earth to the other...

Richard Saunders

Ah to bounce it off the moon. I see.

Prof. Keay

And we got no signal and that was because we were just too far around the curve of the Earth.

Richard Saunders

It was a nice idea.

Prof. Keay

It was a nice idea it would have been great if we had succeeded. Again it was very exciting though to be in telephone communication with Jodrell Bank while they were sending out a signal and we weren't receiving it and vis-versa.

Richard Saunders

It was worth a shot.

Prof. Keay

Oh it was worth a shot, yes. It was a year or two before the Telstar satellite became one of the first to transmit signals back from space, communication signals.

Richard Saunders

Now let's discuss something that is very exciting and a great honour for you personally, which is of course 5007 Keay. Can you tell us a little bit about that number?

Prof. Keay

Well it's an asteroid named after me, because of some of the things I did for astronomy. I was president of commission 22 of the international astronomical union and also chairman of the working group on the prevention of inter-planetary pollution and that plus my radar meteor work in New Zealand and some of the other items that I've... such as Jupiter and so on, lead to me being given this honour.

Richard Saunders

And where is your asteroid whizzing around?

Prof. Keay

Between Mars and Jupiter. I'm tempted to flog off real estate blocks on it. Rocky foundations, excellent view of Jupiter etc, etc, etc.

Richard Saunders

I bet you would like to visit, to go and visit. We could arrange something with NASA what would be fascinating. Now let's talk about later on, when you were in the Newcastle area, you become quite a well-known local astronomer. You had a column in the paper didn't you?

Prof. Keay

Yes for 33 years. I wrote newspaper columns.

Richard Saunders

Now I must come clean with our listeners. As some of you may know I'm certainly involved with the skeptical organization and professor Keay is very long time member of the Skeptics, even longer than I. And he had a column in the newspaper, which dealt with astronomy and space for 33 years, and then one day he was told that his column was no longer needed because they were going to replace it with a psychic column.

Prof. Keay

That's right.

Richard Saunders

That must have been grating.

Prof. Keay

Ha ha... Grating's right. It threw the skeptical endeavours into perspective. It just showed how much good skepticism was necessary because of the junk science that was being put forward by psychics, it was rather shocking that people were taking so much notice of them.

Richard Saunders

Yeah and to think that a popular column of yours which dealt with the wonderful topic of space and astronomy should be ended for rubbish basically is very sad, very sad indeed.

Prof. Keay

Some of the items from it are still available on the web at the Newcastle Astronomical Society's web site. (<http://www.nas.org.au>)

Richard Saunders

In 1978 there was a famous incident with a Sydney and Newcastle fireball, meteor fireball. What was that story?

Prof. Keay

Well I got phoned up by people from the Australian Museum and told me what had happened, I was asleep at the time, and they said it disappeared in the direction of Newcastle, could I try and find if there is any possibility of getting a meteorite from it. And so I looked into it and I concluded that the object, if it had landed on the Earth, would have landed about 70km out to sea from Port Stephens. So there was no chance of recovering it. But I was struck by the number of people who claimed to have heard it go over. Now this has been a long-standing mystery ever since the time of Edmund Halley, two and a half centuries ago.

Richard Saunders

How could you hear it?

Prof. Keay

You could hear it, yes. It made a 'whooshing' 'swishing' sound and people reported that and I started with the standard meteor scientist.... oh just brush the whole idea off. Impossible to hear the sound from 50 miles up instantaneously.

Richard Saunders

Even if it made a noise it would take....

Prof. Keay

...take minute or two for it to get down. So I decided to follow that through and the mystery become more probable to me that something that was physical that needed to be found and I was spending some leave at Ottawa in Canada at the national research council and I was able to make use of their marvellous library facilities and after six months of close examination followed at the University of Western Ontario, the use of the anechoic chamber to try and replicate the sounds and see if they could be generated and if they were due to the transfer of electromagnetic energy from the fireball to the observer and discovered that the energy was transduced by mundane objects such as fizzy hair or grass or pine needles, frozen pine needles and so on, transducing the electromagnetic signal or energy from the fireball into sound that could be heard. And that solution has been published and is accepted and is one of the things that helped me get the asteroid named after me, to solve this mystery.

Richard Saunders

So when a meteor comes relatively close to the Earth like that to be observed and create a fireball...

Prof. Keay

It's got to be a big meteor.

Richard Saunders

You can... it will generate enough energy... and is called...

Prof. Keay

Geophysical Electrophonics.

Richard Saunders

Thank you. Geophysical Electrophonics. That's fascinating. So people can actually in a way hear the meteor going by.

Prof. Keay

Yeah they do. And there are some very notable people reported it and so many people can't be wrong you might say.

Richard Saunders

Well I mean usually in the skeptical field we say that it doesn't matter... that doesn't count because a lot of people can be wrong. But it's worth investigating which you did.

Prof. Keay

Yes but when a lot of people with observational experience report it, you can't discount it. My friends in Canada were doing visual observations of meteors to tie in with their radar observations and a huge fireball went across the sky to the south of them and they all said "Oh gee did you see that? Isn't that marvellous, a tremendous sight." And one of them said, "Did you hear it?" and they all laughed at him and he was the only person that had heard it and afterwards... he's a very talented meteor theorist and he's been everlastingly grateful to me for making him not look like a fool.

Richard Saunders

Yes, yes. I imagine the conditions would have to be right, there has to be something...

Prof. Keay

Well there has to be a transducer and that's what they are.

Richard Saunders

I'd like to thank you very much Professor Keay for spending some time to talk to the 365 days of astronomy podcast. It's wonderful to have a chat with somebody whose whole life been dedicated to this field that we all love so much and thank you again for all your hard work you've done for the Australian Skeptics over the year using your specialist knowledge.

Prof. Keay

Thank you Richard

Richard Saunders

You can see an extended video with Professor Colin Keay at

<http://www.theoriesofeverything.org/dr-colin-keay-astronomy.html>.

This has been Richard Saunders for the Skeptic Zone Podcast at www.skepticzone.tv.

End of podcast:

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