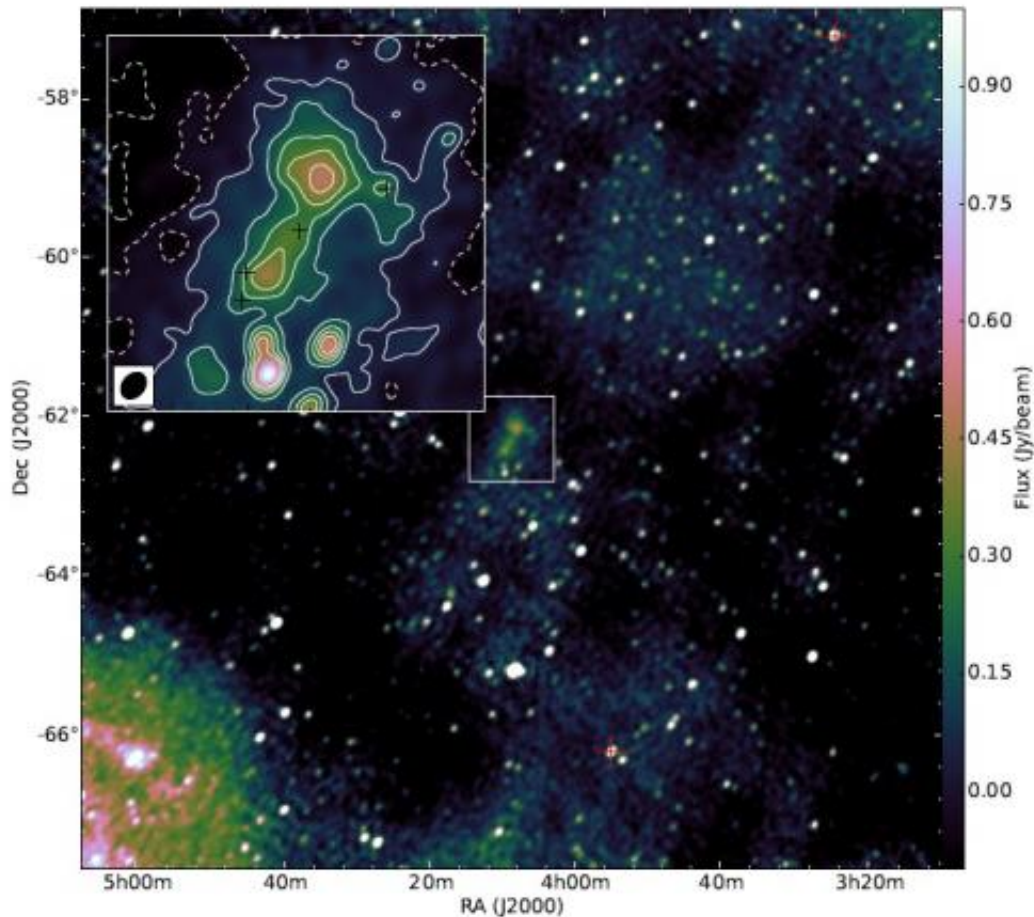


Radio galaxy discovery near Earth spurs more questions

May 23 2014, by Denise Cahill



A radio galaxy is a galaxy which is associated with jets of emission which show up in radio wavelengths. Astronomers have worked out that these jets come from super massive black holes at the centres of these galaxies. The region around the black hole is also visible in the radio, and this shows up as a bright 'core' in

between the wider plumes. Credit: Dr Natasha Hurley-Walker

Western Australia astronomers have discovered a radio galaxy near Earth by accident. The previously unknown radio galaxy is considered quite close to Earth, and was discovered late last year.

ICRAR astronomer Dr Natasha Hurley-Walker spotted the galaxy while in a team meeting last year looking at a [digital image](#) captured by the Murchison Widefield Array (MWA).

"I just saw this thing out of the corner of my eye and thought, that doesn't look right and it turns out it is one of these [radio galaxies](#) and it is very, very faint and it is very nearby," she says.

But while [astronomers](#) consider the galaxy quite close, it is redshift 0.0178 from [earth](#) and would take 248 million light years to get there.

Dr Hurley-Walker says the radio galaxy, named NGC1434 after the galaxy it is in, is very large, which may explain why astronomers had not spotted it in the past.

It is not dissimilar to earth in that it has star formation going on, and it has what is called a dust blain, which suggests it has not been agitated by galaxies colliding (mergers).

"The interesting thing about the object I found is that it's being hosted by a [spiral galaxy](#), like our own," she says.

"This is a very rare occurrence—this is only the fifth of this type to be discovered, and by far the faintest."

Because it is quite near earth, it means the galaxy is quite old, possibly forming within a billion years after the big bang.

Dr Hurley-Walker says the discovery is also intriguing because at some point in its history the central black hole switched off but the [radio jets](#) have persisted.

Jets are narrow beams of matter spat out at high speed from near a black hole.

"That is kind of unusual because normally when we see these things, they are usually still on, have been for quite some time and that tells us the jets have persisted for a very long time.

"[This] is kind of interesting because it tells us that the electrons out there must have been very hot originally so there could still be radiation now," she says.

She does not know why the black hole switched off.

But to unlock the reasons and to find out more, she says researchers will need to observe the galaxy's central core with a high-resolution instrument with a very narrow field of view.

Provided by Science Network WA

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