



Obituary

# Ronald William Arbour (1942–2022)

In a life dedicated to amateur astronomy, the renowned observer Ron Arbour discovered 48 supernovae, one galactic nova in M31, two variable stars, one active galaxy, and several minor planets. He died on 2022 March 12.



Ron in 2021 July. (Alan Dowdell)

Ron was born in Farnham, Surrey on 1942 October 23, but moved to Southampton as a young child. He began his lifelong interest in astronomy at the age of two, when his grandmother taught him the names of some stars and constellations. He started building astronomical equipment at the age of 12, when he made a 33mm spectacle-lens telescope constructed out of a cardboard tube, using a jewellers' monocle as an eyepiece. In 1956 he used this simple telescope to observe Mars. Unfortunately, there was a major dust storm which prevented him from seeing any markings; he initially blamed his telescope. This spurred him on to make a better instrument and he made a 6-inch mirror which he built into a Newtonian telescope. He continued to make telescopes and equipment throughout his life, the largest being a 16-inch Newtonian.

Although not taught in engineering, his background in carpentry and woodworking helped in making astronomical equipment. As a self-taught metal worker, he soon bought a small lathe and he became a fine practical engineer.

Ron's other rock in life was Pat, whom he married in 1969. Pat not only supported his astronomical passions but also his interest in motorbikes (Ron was always a proud rocker). I first met Ron and Pat in 1970. They had set up home in Chandler's Ford, Hampshire, but light pollution quickly drove them away to look for darker skies. Just as they moved out, I moved to the same road. After reading an article in *Sky & Telescope* about Ron's activities, I soon tracked him down to Bishopstoke, outside of Eastleigh.

My first visit set my admiration of Pat for supporting a telescope maker of Ron's standard. The house was a workshop. Sheds in the garden housed lathes, milling machines, gas bottles, dark rooms and an observatory.

At that time, his main telescope was an 8-inch Newtonian on a fork mount, fully driven and all constructed by Ron. He was then a research micro-photographer at the University of Southampton, and had moved into astrophotography though this telescope.

However, as always with Ron, better telescopes were being planned. He decided that components made of cast aluminium would be the way to go for a 12-inch he was designing, and visited an amateur who would teach him how to cast metal. Fortunately for Pat, Ron did not go down this path as he learnt that after leaving the demonstration, the fire house partly burnt down as a result of the heat of the furnace.

Ron continued, but used fabrication of aluminium to construct a truss tube to house a 16-inch mirror of  $f/5$  focal ratio. The telescope was mounted on a fork driven by means of a friction drive system. He had met an engineer who also made telescopes, Brian Knight, who helped with the design and gave some guidance on the machining required. After a time, Ron wanted to improve his telescope and refigured the mirror to a final  $\frac{1}{20}$  wave; this produced very sharp images. It was with this telescope that he refined his ability to take some of the finest amateur photos then available.

He was always planning to use these photographs for looking for supernova and decided that the best way was to record the faintest objects as quickly as possible; he preferred Tri-X film developed in D-76 developer instead of the commonly used hypered Kodak 2415.

Harold Ridley and Michael Hendrie, who were both expert comet photographers, suggested he try taking images of comets and minor planets. Ron found this more serious work fun as well as challenging. He developed his own design of cooled cameras, which were used with great success. He also designed and produced the first computerised comet-tracking camera, to counteract the motion of the comet while being photographed.

He had what he referred to as a 'stargazing period' when he took pretty pictures, but all this changed when in the mid-1970s he terminated three exposures of M66 early, due to the guide star drifting too much. After proceeding to compare the results with a published image of the galaxy, he found that it was different. Although this was due not to a supernova but to what proved to be an H II region, this started Ron's obsession with supernova hunting. For 20 years, he fine-tuned the 16-inch system which was manually controlled via a programmable quartz-controlled drive, but without success in discovering a supernova.

Light pollution had now become a problem in Bishopstoke and in the meantime I had moved to South Wonston, to the north of Winchester. After a visit to these darker skies, Ron and Pat also moved to the village, buying the house directly opposite to mine. Since that time, at least two other observatories have appeared in the village. Ron always claimed that one day we would have more telescopes than Kitt Peak.

Ron felt that the development of the home computer and the telescope drive system could be

used to make searching quicker, in the form of what is known today as 'GoTo'. He did not have the knowledge to build such a system, so he enlisted those who had the programming skills; unfortunately he was before his time and they never quite got these systems to work. The return of Halley's Comet in 1986 spurred amateurs to attempt to be the first to photograph it. Ron realised that his 16-inch would

not be in the correct position to see this comet in the morning sky. Not a problem for Ron; he uprooted the telescope and repositioned it on Pat's patio. There was always a debate regarding who photographed the comet first – Alan Young using a 24-inch, or Ron – but there was only some 15 minutes between them that morning.

Ron's work had reached Patrick Moore and Ron was signed up to appear in a *The Sky at Night* programme in 1985 September, which was made in Ron's and Pat's garden and showed the telescope on the patio. In the programme, Ron explains to Patrick the motions of the telescope used to photograph the comets and supernovae. Out of camera shot, I was lying on the ground providing the telescope's movement, as the computerised motion failed just at the wrong time.

After 20 years of unsuccessful supernova patrolling, Ron decided that his home-built technology had to give way to a commercial GoTo telescope, so he bought a 12-inch Meade Schmidt-Cassegrain. This telescope, driven



Ron with his 16-inch Newtonian in the late 1980s. (Pat Arbour)



via computer programs that were developed by Dave Briggs (who used the Hampshire Astronomical Group's telescope at times to confirm Ron's discoveries), allowed Ron to image about 1,000 galaxies a night. (Back in 1985, he told Patrick Moore that he could then photograph up to 12 galaxies each night.) Ron's attention to detail in his techniques and selection of exposure meant he could go fainter than most. However, Ron realised that even this new Meade needed improving, and promptly rebuilt its drive to his standards. This proved successful and his first discovery was made in 1988.

After working with the problems of producing dry ice with CO<sub>2</sub> and playing with developers to get the results he wanted, Ron decided to try the then-new CCD camera design. In 1991, he used one of the first Starlight Xpress frame-store cameras. (After the support he received from Terry Platt, the principal designer, he would use Starlight Xpress cameras for all his discoveries.) In 1995, he organised the first UK CCD symposium, which supplied inspiration for many who attended.

Also at this time, Ron was elected to the BAA Council and was Vice-President for a period. He was keen to promote astrophotography and persuaded the Council to form a new Section for this subject. He also campaigned for another Section to cover the growing interest in the deep sky; this too was formed and he became its first Director. Light pollution had driven him to move house twice and he was very concerned about this growing problem, co-founding the then Campaign for Dark Skies. He was awarded the Association's Walter Goodacre award in 2008 June for his contribution to the progress of astronomy over many years.

He had also started while living in Bishopstoke a new local astronomical society called Solent Amateur Astronomers. The group is still successfully running after 50 years.

For a time he set up a small business to make telescopes based on his designs; a few were made. The Hampshire Astronomical Group observatory still has a 12-inch in operation that he made. He also made Cheshire eyepieces for alignment of telescopes. At the time these were not generally known or easily available.

He was always developing equipment to get better results and most of these designs he published in the *Journal*. They ranged from a focusing system that used a chain drive, dry-ice-cooled cameras, a computer-driven offset for comet imaging, and even the use of Sellotape for cleaning corrector plates.

Professional automatic patrol systems meant it was getting more difficult to make amateur discoveries, so Ron wanted to go still fainter. He obtained a second-hand 14-inch Celestron tube via an advert in the *Journal* and invested in a Paramount equatorial mount to drive it. By 2016, he had discovered 40 objects; he would be approaching 50 before he died. This put Ron in third place in the UK after Mark Armstrong and Tom Boles, both of whom had taken inspiration from Ron.

At an AGM of *The Astronomer* magazine, he demonstrated his techniques by showing images of galaxies. We in the audience had the

opportunity to identify any possible supernova on each image before moving on to the next. Most found it difficult to spot in these conditions, let alone for 1,000 galaxies a night! Ron kept his exposures short in order to not burn out the image surrounding the nucleus; a lot of his success was in detecting supernovae close to the galaxy which were missed by others.

The 14-inch telescope started to produce optical alignment problems, which was a reason for Ron to upgrade his observatory again. The dome had long gone, being replaced by a run-off-roof observatory with a heated room attached for Ron to sit in, with computers to control the telescope and monitor for supernovae. (Ron checked the images as soon as they appeared on his screens – waiting until the next day usually allowed someone else to claim the discovery, he said.) The weather was getting to this observatory, so a new run-off roof was installed.

While he has building this, he ordered a new Paramount and PlaneWave 17-inch telescope. It was great fun to see these sitting in the lounge while being tested and driven by his computer. After delays caused by the COVID-19 lockdowns, which meant Ron could not get the manpower supplied by members of the Basingstoke Astronomical Society to move the telescope into the observatory, the upgrade was finally completed. The system was out of action in mid-2021 as the mount had to return to America after damage. Sadly, no new discoveries were made and the last observing run was made before Christmas 2021, just when Ron was becoming ill. After a lifetime of observing with different telescopes, Ron said that overall you cannot beat a Newtonian and the 16-inch was still the best.

Ron, who spoke quietly, was never keen on public speaking, but he corresponded with a large number of amateur and professional astronomers all over the world. He would make great effort to answer people's enquires as quickly as possible. The visitors' book for the house reads like a Who's Who for astronomy. Ron and Pat entertained for a few days the leading astrophotographer of the 1980s, Jack Newton from Canada. Ron organised a meeting in Winchester so that Jack could speak while in the country. Being only a few miles from Winchester, Ron and Pat would have an open house for those attending the Association's annual Winchester Weekend. They ran famous Christmas parties at which, in the early years, they would show how to really dance to rock 'n' roll.

Ron had a great sense of humour and always kept Pat laughing. He had strong views on how the amateur astronomy world should be run, as the Comet Section Director Nick James has said, and he was usually right.

We had great times together, attending astronomical meetings as well as running the new Sections and societies. Ron did not like flying, but with Pat he went to America to meet fellow astrophotographers with whom he had been corresponding. On one trip, he obtained a full-thickness 16-inch mirror blank which he brought back as hand luggage.

Ron was not very tall and that is why he liked his photo of him standing by his 16-inch telescope – he said people did not know if he was short or the telescope was large.

Ron and Pat were a devoted couple, having no children and no living close family. Well over 70 friends attended his service on the 2022 Apr 11 at Wessex Vale Crematorium near Southampton, at which Nick James gave an appreciation of Ron's life.

Ron made great effort to communicate his results and describe in detail his projects. He was a regular correspondent on the Association's online forum.

He will be missed but remembered for a long time.

For more details of Ron's work, see *Sky & Telescope*, the *BAA Journal*, *The Astronomer*, *The Astrograph*, *Deep-Sky Observer*, *Pulsar*, *Hermes*, *Federation of Astronomical Societies Newsletter*, *Amateur Photographer*, *Camera Magazine* and many society magazines. He was involved in books by Patrick Moore, Heather Couper, Ian Ridpath, Storm Dunlop, Colin Ronan, Gerald North, and Martin Mobberley. He also had many images shown on *The Sky at Night*, of which a programme was dedicated to his work and observatory in 1985. He was elected a member of the British Astronomical Association on 1974 Nov 27 and was also an honorary member of Solent Amateur Astronomers, Hampshire Astronomical Group and Basingstoke Astronomical Society. 📷

**Alan Dowdell**

*With assistance of Pat Arbour*



Ron and Pat with the 17-inch PlaneWave in his run-off observatory, 2020 September. (Alan Dowdell)