THE GATHERING Owners of SDM Telescopes Dobsonians converged on Coolah in NSW in April for an aperture-based star party. The man atop the ladder is Peter Read, the brains behind SDM Telescopes.

BIG SCOPES for a big sky

SDM fans from around the world gathered in rural NSW to celebrate their aperture fever.

WHEN IT COMES TO BIG transportable Dobsonian telescopes, the man to see is Peter Read. A music teacher by day and telescope builder by night, Read has been building premium custom-made Dobsonians in his workshop near the Victorian regional city of Shepparton since 2004. Today nearly 80 SDM telescopes (**www.sdmtelescopes.com.au**), with apertures up to 100 cm, can be found collecting photons all across Australia and as far afield as New Zealand, Canada, the USA and the UAE.

With so many SDM telescopes in existence it was only a matter of time before an SDM star party was organised. And so it was in early April 2019 that eighteen telescopes and their proud owners, partners and friends, were invited to Allan Wade's rural property near Coolah, NSW, for four days and three nights of observing under dark rural skies. The event was also a celebration of Wade's fulfillment of a lifelong dream — the completion of the Black Widow Observatory housing a majestic 81-cm SDM telescope, named the 'Black Widow'.

The inaugural SDM Star Party commenced on the first Thursday in April, with attendees from Queensland, New South Wales, Victoria and South Australia, plus international guests from the USA and Canada. After a good night's observing that evening, a convoy of cars set off on Friday morning for Mount Woorut. Located in the scenic Warrumbungle National Park, this rugged landscape was the backdrop for David Bowie's 'Let's Dance' film clip and more recently Professor Brian Cox and the BBC's Stargazing Live Australia program. But the purpose of our visit to Mount Woorut was a behind-the-scenes look at its most famous tenant, the world-renowned Siding Spring Observatory.

A highlight of the tour was a close up view of the latest re-incarnation of the much admired 2dF (2-degree field) instrument. Mounted on the secondary cage of the 3.9-metre Anglo-Australian Telescope, the 2dF has undergone repeated upgrades to the extent that little remains of the original unit. Able to capture the spectrum of up to 392 galaxies and stars at a time, the 2dF was used in such breakthrough surveys as the 2df Galaxy Redshift Survey (1997–2002), 2dF QSO (quasar) Redshift Survey (1997–2002), 2dF Wiggle Z Dark Energy Survey (2006–11), and the 2dF Galaxy & Mass Assembly (GAMA) Survey (2008–14). To quote Observatory staff, such surveys have been "a boon for cosmologists studying the formation and large scale structure of the universe".

ALL PHOTOS BY MICHAEL E. LOCKWOOD.

COSMIC CANNON Allan Wade's new pride and joy, the 81-cm Black Widow, appears to blast the Milky Way into the night sky.

A learning experience

The following day, Saturday — having returned to Allan's property on Friday afternoon — our host had cunningly organised a pizza lunch. With a captive audience, the first of two talks commenced soon after. Special guest Mike Lockwood of Lockwood Custom Optics spoke of the 'Steps of making a mirror' and of the journey of how his hobby became his full time profession. Interestingly, the most common mirror size Lockwood now makes is from 50 to 61 cm (20" to 24"). There is a seemingly ever-increasing shift to faster focal ratios, but Mike recommends no faster than f/2.75 due limitations of current coma correctors. The most common mirror now used in SDM telescopes is made by Lockwood.

After a short break, retired psychiatrist and lifelong amateur astronomer (and SDM owner) Dr John Carr gave an illuminating talk on the evolving field of astrobiology. Combining the disciplines of astronomy, physical cosmology, exoplanetogy, geology, biochemistry, molecular biology, biophysics, chemistry and biochemistry, astrobiology considers the possibility of extraterrestrial life, and how we may be able to detect such life-forms in the future.

Dr Carr's talk took us on a journey in the search for extraterrestrials. Science tells us the building blocks of life are common in the universe. But numerous searches for E.T. over the decades have all failed. The Fermi Paradox asks the simple question, "Where are all the aliens?" Drake's famous equation tells us why. The likelihood of technologically advanced aliens evolving in our own Milky Way galaxy is remote. Look at the Earth — one estimate suggests 99% of all species that have ever existed are long extinct. That leaves an estimated 12 million species living today. Only one species on Earth has evolved with the technological knowhow to maybe one day journey to the stars and become a respected member of possible intergalactic civilisations. But we are not there yet and there is no guarantee we ever will be — think nuclear war, asteroid impact and climate change.

Dr Carr's talk was an impressive introduction to the complex field of astrobiology, covering topics as diverse as why water is needed for life, habitable zones, the weird world of extremophiles, the Great Oxygenation Event, and how little intelligence is needed for the survival of long-lived species.

Black Widow's first light

But the real deal of the SDM Star Party was the night. Dark, moonless, rural skies, experienced deep sky observers and big Dobsonians — with sky quality meter readings of 21.75, what more could a keen amateur astronomer want? How dark was it? Reading a book by the light of the Milky Way proved elusive but the Horsehead Nebula, low in the west, presented no challenge for the 61-cm telescopes.

As expected, the big Dobs provided wonderful eyepiece views. Messier 83 (the Southern Pinwheel Galaxy) and its low surface brightness can be a challenge, but the three main spiral arms and their numerous off-shoots were clearly evident. Of M83 one observer noted "a distinct cutoff of spiraling arms against a jet black sky". The starburst regions of NGC4038/39 (known as the Ringtail or Antennae) colliding galaxies were a sight to behold through the Black Widow, while the usually elusive long, thin, tidal arms were traced for much of their length with the 61-cm scopes. The Spiral Planetary's (NGC5189) unusual 'S' shape, reminiscent of a barred spiral galaxy, took on a dramatic new look through the Black Widow at 514x, provoking one excited observer to suggest the hook was seemingly trying to poke his eye out.

The combination of a 50-cm f/5 telescope and binocular viewers coupled with matched, paired Panoptic eyepieces yielding 180x, proved irresistible for some. Wes Smith waxed lyrical: "So easy on the eyes. It is like the limo of observing, or could I liken it to lying in the most comfortable leather lounge" and added, "roaming the dark skies we slew to an

exquisitely detailed view of the Homunculus Nebula and could see two dark areas in the nearer lobe". Jeff Shaw was not going to miss any of this and routinely climbed ladders to take his turn at the eyepiece. Jeff is 85 years old.

Mike Lockwood demonstrated his observing skills when challenged to find supernova 1987A (SN 1987A) using the Black Widow. Back in February 1987 the first naked-eye supernova since the invention of the telescope unexpectedly burst into view in the Large Magellanic Cloud, reaching a peak magnitude of 2.9 the following May. Now much fainter at around magnitude 15 and measuring no more than 2″ across, it became the challenge object for the SDM Star Party. Finder charts and patience were needed, made all the more difficult by the close proximity of the larger and brighter Honeycomb Nebula, a supernova remnant 2.5′ southeast of SN 1987A. But there it was, blinking in and out view with direct vision. Detailed observation with averted vision and careful comparisons with the finder charts, left Mike's and Allan's observing buddies in no doubt they had spotted SN 1987A.

The SDM Star Party provided for our host, Allan Wade, a memorable first light experience for his Black Widow Observatory. Hundreds and hundreds of hours of planning and building the observatory over several years came down to one special moment. On Saturday night a bright meteor streaked across the sky, through the Large Magellanic Cloud, and burst into pieces across Centaurus. Standing next to Allan was noted meteor observer (and the world's greatest comet hunter) Rob McNaught. There too on the observing field were the SDMers (as they are now called), in what is thought to have been the largest gathering of large-aperture Dobsonians in Australia, or anywhere in the Southern Hemisphere for that matter.

Just as quickly as the star party began, it ended. Four wonderful days and three splendid dark nights of observing, made all the more enjoyable by the presence of the man who created all these telescopes, Peter Read. SDM. Cheeky — it stands for 'size does matter'.

Planning and organisation for inaugural SDM Star Party took a year and was largely undertaken by our host Allan Wade, who, post star party, will now be able to spend more time roaming the night sky with his partner in astronomy, the Black Widow. It can be said of SDM owners that "tonight I am off to visit the cosmos — I will be back whenever". Put your eye to the eyepiece of a huge Dobsonian and then, and only then, will you truly understand.

ROD DOIG, an amateur astronomer for 45 years, is off to visit the cosmos with his 61-cm SDM — he will be back sooner or later. He thanks to those who provided information and photos for this article, in particular Wes Smith, Ron Knight, Dr John Carr, Mike Lockwood, Steve Kinnear and Allan Wade. For Mike's take on the SDM Star Party, refer to his website at www.loptics.com

▲ **DOME DAYS** The group made a side-trip to Siding Spring Observatory, where they visited the giant Anglo-Australian Telescope.

BIG SCOPE Allan Wade (left) and Mike Lockwood are dwarfed by the Black Widow.