

## NRAO ONLINE 48

### A Tale of Three Peg-Events—Locating the Parkes Telescope, 1958-1959<sup>1</sup>

We have discovered that at least three groups marked the spot of the Parkes Telescope in the years 1958 and 1959. Thanks to communications from the Mills, Jelbart, Nash and Helm families we can reconstruct the events of almost 60 years ago. However, some of the dates of various activities remain uncertain, to within a few months.

As the site was chosen in March 1958, Mills and Christiansen played major roles as described in the main book text. (Chapter 32)

The photographic evidence of these events of 1958-1959 is a complex series, filled with some intrigue. Thanks to the impressive detective work of John Sarkissian (CSIRO, Parkes Telescope) in 2018 and 2019 it is now possible to construct a timeline for the various peg-events in 1958-1959. Frater, Goss and Wendt (2017, p. 42-44) have presented a preliminary narrative that can now be continued. The image shown on page 44 of the Frater et al book (Fig 3.18, a poor copy of Fig. 2 in this text) does show an event in March 1958 at an initial site chosen by Mills, Christiansen and others in early 1958. In the era 2015-2017, during the preparation of the *Four Pillars* book, Goss and Wendt were only aware of the published image (Fig 3.18), provided to Goss earlier by the Mills family (via the assistance of Richard Hunstead). Goss and Wendt had looked at the 1958 collection of images in the CSIRO Radio Astronomy Image Archive (CRAIA). There was no evidence of the image of the Mills et al 1958 event. Unfortunately, the CRAIA collection that Wendt and Goss had only included images through 1989.

In December 2019, John Sarkissian found image B15861 in the collection for 1991. This image is shown in Fig. 2.<sup>2</sup> The image had been given to the RPL CRAIA group in 1991 as it was scanned and then placed into the archive. It was not placed in the correct year associated with the event, 1958. Wendt has discovered that a few other images have been recorded in the year in which they were received for scanning and not when the images were initially recorded. The image B15861 has a better quality, in spite of the bizarre horizontal “halo” emitting from Christiansen, clearly a photo defect. Following a suggestion from Harry Wendt we conclude that the lack of photographic evidence in the original 1958 CRAIA is not surprising due to the

---

<sup>1</sup> John Sarkissian of CSIRO Astronomy and Space Sciences, Australia Telescope National Facility, Parkes Observatory has contributed substantially to this text since 2018. We also thank Andrew Tracy Property Services Manager - Business & Infrastructure Services and Rob Birtles, from the CSIRO Records Services – Collections and Archives

<sup>2</sup> For completeness, we show in Fig.1 the earlier photo of the site selection colleagues, Christiansen, Wild and Mills at the Camden site (closer to Sydney) from 1957 or earlier 1958. The site is on the Nepean River and is also Fig. 1 in NRAO ONLINE 44.

rivalries with Mills and Christiansen in 1958-1960. Thus a scanned photo was only added to the archive, in the collection for 1991.

The image shows Mills (with a remarkably small hammer), Austie Helm holding the stake, unknown man (possibly James T. Helm, father of Austie) and Christiansen. The two CSIRO scientists wore ties for the occasion. Austie Helm was the owner of the farm "Kildare", having sold the smaller parcel to the CSIRO for the telescope site.

The orientation of this photo is shown in Fig. 3, provided by John Sarkissian in 2019.<sup>3</sup> The date of the photograph can be determined by letters that Bowen wrote (on 26 March 1958, actually drafted by Arthur Higgs) to both the Goobang Shire Council and to Helm after the visit to Parkes by CSIRO scientists on 21 March 1958.<sup>4</sup> The picture was likely taken by Lindsay McCready, since he was also present on 21 March 1958, not appearing in the photo. This was the first "Peg Event."

But this site did not remain as the permanent location of the Parkes telescope. Denis Helm told John Sarkissian on 30 June 2019 that, "... [F]ollowing soil analysis of this area [at this first site], that involved drilling test bores around the site, it was found that the ground was clay bearing to a considerable depth and was deemed unsuitable. An area to the south of the property was much better suited with the clay only going down to a depth of a few metres before hitting bedrock."

By early July 1958, it was clear that the site would be moved to this southern location.

During this period, additional CSIRO personnel visited the site. In Fig. 4, the CSIRO scientist Frank Gardiner (later a major user of the Parkes telescope) visited the site and was photographed by local CSIRO site manager George Day along with their neighbours Austie Helm and his son Denis. In this re-enactment of the first Peg Event, Denis appears to drive in the stake; clearly, an additional, small stake is also present at the base; he may have been asked to place a more substantial peg. The orientation of this photo is towards the southeast. The date of this image is not known. From Sarkissian's analysis, the tree-less field leading to the stand of trees in the distance indicates the location of the photo can be associated with the Mills photograph (Fig. 2). The smaller peg could well be the peg used by Mills. If this supposition is

---

<sup>3</sup> Denis Helm (the son of Austie) provided the image to Sarkissian on 30 June 2019.

<sup>4</sup> Letter addressed to A.J. Helm, Australia "Austie" Helm. He was born on 30 July 1915- In 1915, 30 July was set aside to celebrate Australia's WWI soldiers (at Gallipoli) and to raise funds for the Red Cross. This day was referred to as "Australia Day".

correct, this image was obtained shortly after 21 March 1958 (Fig. 2). Possibly Frank Gardiner was sent by RPL to assess the site soon after the initial peg event.

Pawsey was in the US until late April 1958; he was not present as the site decision was made in March 1958 (main text, Chapter 24, NRAO ONLINE 44). In Frank Kerr's article "Early Days in Radio and Radar Astronomy in Australia" in the Sullivan 1984 collection *The Early Years of Radio Astronomy: Reflections Fifty Years after Jansky's Discovery*, Kerr shows the image shown in Fig. 5. The caption states: "JL Pawsey marking the spot for the centre of the Parkes 210-ft telescope, October 1958." However, Pawsey is holding a reel of cable; also note the small hammer on the ground at his feet. Based on a letter from Lindsay McCready to Helm from 5 September 1958, the CSIRO group were to arrive to erect the poles of a weather station (wind speed and direction only) on 10 and 11 September 1958. Also, McCready informed Helm that CSIRO would not need help from him nor from his son Denis (age 17 or 18). Could Pawsey have come to Parkes to see the site for the first time and to assist in the placing of the weather station? If so, the image in Fig. 5 could represent Pawsey's first visit to the GRT site. The direction of the image is to the southeast, but is ill-defined.

In February 2018, at a meeting of the Central West Astronomical Society at the Parkes telescope, a member, Jim Nash, told John Sarkissian of an event in October 1960 that clarifies a number of issues about the official "Peg Event" for the GRT. Jim Nash had visited the site on 9 October 1960 (Sunday) with a number of friends and cousins. At this time the telescope tower was completed; Jim Nash reported that two of his cousins, Sidney Alan Nash (1938-2003) and Sid's brother Murray Ernest Nash (1942-2016), had both been surveyors/engineers working for the Parkes Shire. Sidney was the Shire Engineer and his younger brother was a cadet engineer with the Shire. These brothers told Jim Nash in October 1960 that they had been responsible for the **official peg event**, the second "Peg Event" (as employees of the local government authorities) which had occurred earlier; Murray swung the hammer and Sid held the peg. Since the excavation for the tower began in September 1959, the date was likely in late August or early September 1959.<sup>5</sup>

---

<sup>5</sup> The excavation for the GRT tower began in late September 1959; while the erection of the concrete tower began in November 1959 with completion in March 1960. By September 1960, the MAN crew from Germany (NRAO ONLINE 46) arrived with the steel components of the dish. The derrick for installation was installed during this month, with use of the derrick beginning in November 1960. By end March 1961, 80 percent of the steel work was done as well as the tower. By August 1961, the dish was essentially complete.

The Jelbart family, nearby neighbours of the Helm family, also successful farmers, witnessed the Sid and Murray peg event. They lived on the adjacent farm; later Phil Jelbart<sup>6</sup> worked for the CSIRO at the telescope site planting and maintaining the tree plantation and working on weed control.<sup>7</sup> Phil took the photo shown in Fig. 6, given to John Sarkissian in the early 2000s by Rodney Jelbart. The young children of Phil<sup>8</sup> and Gwen Jelbart were Lyndall (born 1955, to the right) and her younger brother Rodney (born 1957, to the left). Rodney Jelbart was told later that he was two years old and his sister four at the time of the photo as they witness the activities of the Shire employees. Afterwards the picture of Fig. 6 was made with a prominent stake. The orientation of the photo is shown in Fig. 7 and 8. The trees used for alignment of the photo are indicated by the letters in the photo. This location marks where the GRT was to be constructed. The Jelbart family photo is the only surviving permanent record of this event. In August 2019, the Parkes Shire Council could find no record of this event.

A third event of 1959 was recounted by Jim Nash in 2018, as reported by Sid Nash in October 1960. After the official Shire peg was installed but sometime before the tower was built (before November 1959, likely August or September 1959), a film crew arrived with a VIP to film a peg event. The onlookers had no idea of the identity of the VIP, E.G. “Taffy” Bowen, along with Lindsay McCready: “... [The group were] supposed to drive in the first peg marking the site with camera crew filming. Trouble was the site was already pegged, so the whole crew [camera crew plus McCready and Bowen plus the “surveyor”] went up the paddock a bit and filmed the VIP [Bowen] driving in the peg.” See Figs. 9 and 10.

Phil Jelbart also witnessed this VIP event as recounted in *Four Pillars of Radio Astronomy: Mills, Christiansen, Wild, Bracewell* (Frater et al, 2017 page 42 and 44). The event did not occur in September 1961, as reported by Frater et al. We conclude that this was the date on which the photograph in the CSIRO Radio Astronomy Image Archive was copied from the film. Jelbart was

---

<sup>6</sup> Phil Jelbart (1914-2013) was a well-known accomplished musician, having trained in Sydney and having been offered a job with the Sydney Symphony Orchestra in 1939 as a violin and cello player. He decided to return to the country in Parkes but remained an active amateur musician in Parkes.

<sup>7</sup> As Rodney Jelbart remarked in the eulogy for his father in January 2014, when his dad would have been 100 years old: “Most of the trees around the telescope site today owe their existence to Phil Jelbart.” The *Champion Post*, the newspaper of Parkes, NSW, of 30 October 1961 (day before the opening of the GRT) reported that the tree windbreak consisting of 5000 trees had been constructed on the western, northern and southern sides of the GRT site. The planting was carried out in August 1959 and a year later. A photo taken on 18 December 1969 by John Masterson is shown in Fig. 14. From *Handbook of Trees and Shrubs from the NSW Forestry Commission 1971-1972*. CAPTION: Photo of the Parkes telescope on 18 Dec 1969, the southwest corner of the site. The windbreaks were planted by Jelbart ten years earlier. Note the 60-foot telescope on a railway track to the right centre. CRAIA, P9309-4, photo by John Masterson. In Fig 15 we show the GRT site before September 1959 with the a, b and c trees and the three PEG EVENT sites indicated.

uncertain of the date when he recalled these events to his family. He too was surprised by the nature of the staged event. His recollection is consistent with the date in 1959 reported by Sid Nash to his relatives in 1960.

On 3 October 1971, Frank Kerr described the staged peg event to Woody Sullivan<sup>9</sup>:

... **a few weeks later**[our emphasis] [after the official peg event] Taffy Bowen went up to the site very quietly with McCready and he got McCready to take a picture of him [Bowen] driving the post in, that would show where the site was. And that picture has been published in various propaganda journals. [Kerr was laughing as he described this to Sullivan].

Thus a possible date for the Bowen staged event was likely in the time range late September to early October 1959.

From the film<sup>10</sup>, it is possible to determine where the re-enactment occurred. The relevant section is from the 00:40 to 01:30 minute marks. At the beginning of the scene, the “surveyor” walked ahead dragging a wire. McCready (with a tie) remained behind with the theodolite, telling the surveyor where to place the surveying marker (Fig. 10). Prominent trees appeared in the film, allowing the location of the event to be determined. Immediately, the surveying marker was withdrawn from the earth. Bowen (with a tie) appeared with a sledge hammer, driving in a large peg. (Both the surveying marker and the peg are visible Fig. 9). Then, a long sequence in the film occurred with McCready and Bowen and several other participants. This was clearly at a different occasion since Bowen and McCready were dressed quite differently. For some unknown reason, Bowen then dug a modest size hole with a shovel, with no peg in sight. Then the remainder of the film consisted of many telescope construction images, beginning with earth works with a Caterpillar grader. These images may imply that the third peg event was intending to signify the official beginning of GRT construction.

Fig. 11 and Fig. 12 show additional details of the Peg Event 3 based on screen shots from the movie. Both show the overall location of Peg Event 3. The latter shows an overall view which includes both the Peg Event 3 location and the final site location (Peg Event 2).

---

<sup>9</sup> W.T. Sullivan III, archive, NRAO: Papers of Woodruff T. Sullivan III, “Interview with Frank J. Kerr ,” NRAO Archives, accessed December 14, 2020, <https://www.nrao.edu/archives/items/show/14996>

<sup>10</sup> The film sequence can be viewed online at [https://www.parkes.atnf.csiro.au/people/sar049/history/Parkes\\_Construction\\_27min.mp4](https://www.parkes.atnf.csiro.au/people/sar049/history/Parkes_Construction_27min.mp4)

An image of a portion of McCready's Hill (construction debris) is shown in Fig. 13 from November 2011, photos by John Sarkissian. The view to the north towards the telescope shows some of the building rubble.

Fig. 14 and 15 show the overall site, the former shows the final completed dish in December 1969 in a well-known photo by John Masterson from an aircraft. Fig. 15 shows an aerial view with all three Peg Events (1, 2 and 3).

38.1

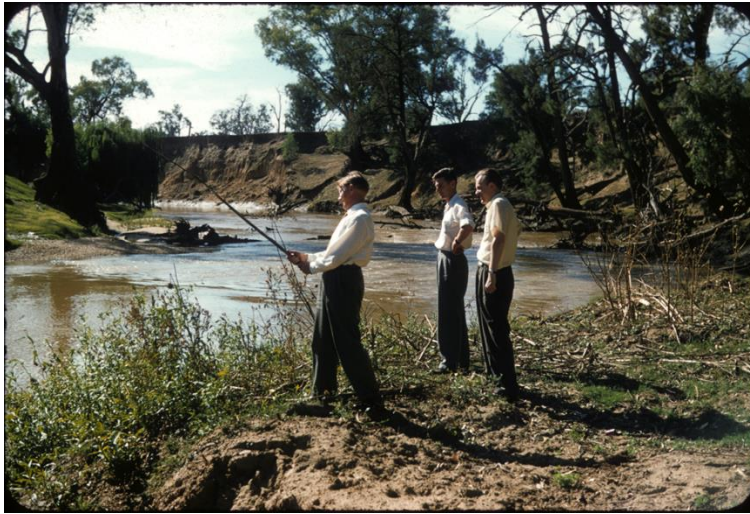


Fig. 1 In 1957-1958, CSIRO scientists investigated a number of sites near Camden NSW along the Nepean River. Here Christiansen, Wild and Mills (left to right) were taking a break as Chris pretended to fish. The favoured site was Cliffvale near the Nepean River. (image taken by George Day from the David Nash collection)



Fig. 2. PEG EVENT 1. Friday 21 March 1958. From left: Mills, Austie Helm (holding the stake), possibly James Thomas Helm (father of Austie, "Jim") and Christiansen. CSIRO Radio Astronomy Image Archive B15861 from 1991, year of scanning the image from 1958. Note a number of photographic flaws, such as

a horizontal halo enveloping Christiansen. Based on John Sarkissian’s research in 2018-2019, the view is to the south, no hills appear on the far horizon. The foreground is a treeless field, then a group of trees in the distance. See Fig. 3 for the location of the photo at the north end of the Helm property, the location of this first proposed telescope site (“The Centre of the Telescope” in March 1958). After a few months, this site was rejected based on the results of drilling cores in the earth at the first site. Then a second and final site was located farther south on the Helm’s property. In the photo shown by Frater et al 2017, page 44, Austie Helm is misidentified. The tree projected over Christiansen’s head is not one of three trees (a b and c) used for identifications in additional images (e.g. Fig 3, Fig 7 and Fig 11 and Fig 12). This tree behind Christiansen is also noticed at the extreme left side of Fig. 9, to the left of McCready at the edge of the figure.

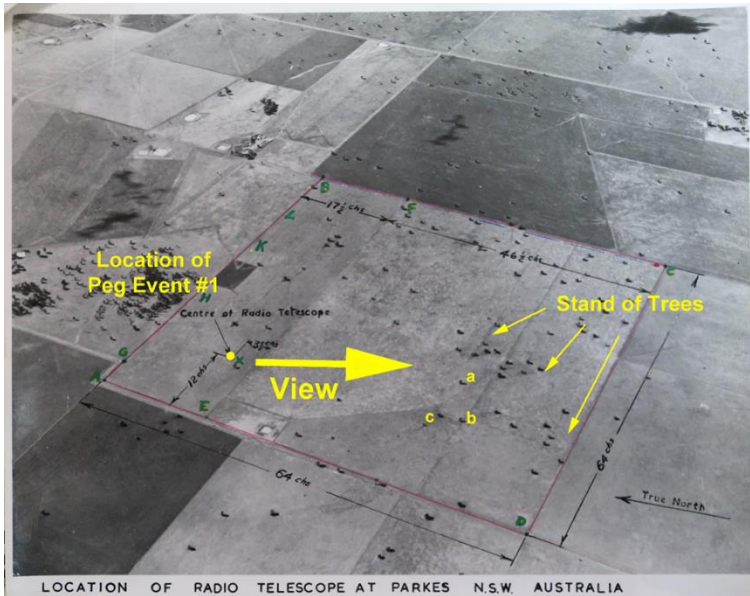


Fig. 3 PEG EVENT 1. The first location of the GRT site in March 1958, later moved to the south end of the property. NAA C3830, A1/5/11/5A Part III, also the Helm family collection. North is to the left.



Fig. 4. PEG EVENT 1. George Day photograph of the first site obtained from David Nash. Left to right Frank Gardiner, Austie Helm and Denis Helm, with the hammer. The truck is Austie's Commer (the type of truck). A small stake is also visible, possibly left over from the previous March 1958 event (Fig. 2). No date is associated with this photo, likely shortly after the March 1958 initial peg event. From the lack of hills on the horizon, the photograph was taken facing south.



Fig. 5 Pawsey at Parkes, possibly during the installation of the weather station (wind speed and direction) on 10 and 11 September 1958. Photo from Frank Kerr (The Early Years of Radio Astronomy, Reflections Fifty Years after Jansky's Discovery, 1984, article by Frank Kerr "Early Days in Radio and Radar Astronomy in Australia", page 133). Note the small hammer on the ground near Pawsey's feet. Sarkissian has pointed out that there is not enough detail in the background to determine the location of this photograph; due to the absence of hills in the background, the photographer is facing south. The order of Fig. 4 and 5 is uncertain due to a missing date associated with the photograph in Fig. 4.





Fig. 6 PEG EVENT 2. Photo from the Phil Jelbart family collection. This is the site of the official peg event by Sid and Murray Nash in July-August 1959, well before the start of construction on the tower in late September 1959. No photos of that event have been found (see text for full description). The Jelbart family had witnessed the peg event. Based on the proximity and orientation of trees, the peg in this photo is the official peg from the Nash brothers, marking the final position of the Parkes telescope. This photo of Phil Jelbart’s young children Rodney Jelbart (left, born 1957) and Lyndall Jelbart (right, born 1955) was taken some time close to the time of the official event. Note the characteristic trees, the uniquely shaped “a” tree at the top right and tree “b”.

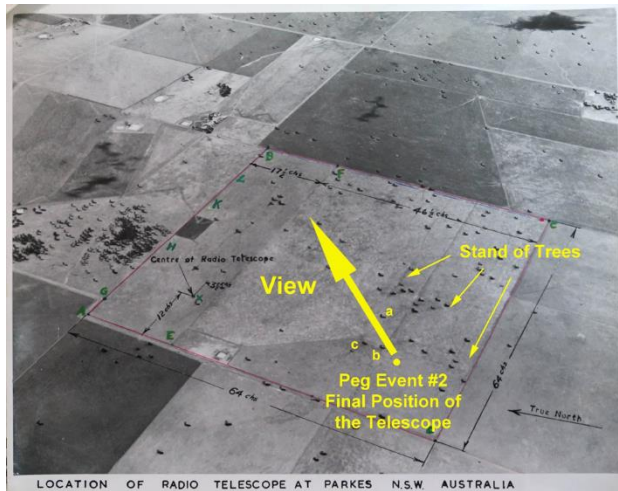


Fig. 7. PEG EVENT 2. Aerial view showing the orientation of the Jelbart children and the official peg from July-August 1959. The location was at the southern end of the property, the permanent site of the GRT. Note that the aerial view is identical to Fig. 3. The first location (PEG EVENT 1– the originally planned “Centre of Radio Telescope”) is indicated to the left as well as the new and final location of the GRT (PEG EVENT 2) at the right hand of the figures.



Fig. 8. Photo from circa October 1960 just after the tower had been completed. The three nearby trees (a, b and c) indicate the position of the Jelbart photograph with respect to the telescope. Tree “a” has a characteristic shape with a notch at the left-hand top. CSIRO Radio Astronomy Image Archive R5930-72.



Fig. 9. PEG EVENT 3. Bowen's and McCready's re-enactment event occurred in a period from late September to early October 1959, some weeks after the official peg was driven in by Sid and Murray Nash. Lindsay McCready is on the left. The orientation of this event is shown in Fig. 10. The date of this photo, reported in the book by Frater, Goss and Wendt of 2017 (29 September 1961), is likely the date on which the still image was made from the film made two years earlier in 1959. Bowen drove in the re-enactment peg. Note that the tree in the background is not one of the lettered trees; see Fig 2 for another view of this tree from the north end of the site. The line of sight of the camera is to the south-southwest, missing the line of site to the final telescope position. A screen shot from the movie described in Fig 12.



Fig. 10 PEG EVENT 3. Lindsay McCready directed the "surveyor" to the site where the staged peg event was to occur. This location was a few hundred metres northeast of the final telescope location, close to tree "a" with the unique shape. Likely date is late September to early October 1959. A screen shot from the movie described in Fig 12.

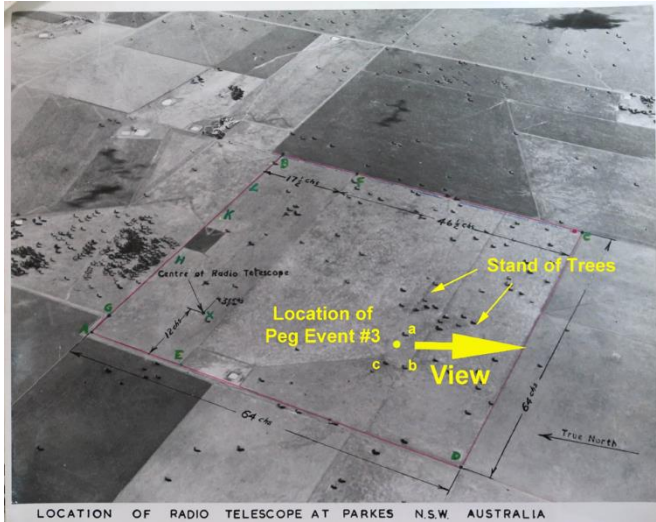


Fig. 11. PEG EVENT 3. The location of the Bowen re-enactment site is shown, to the northeast of the final position of the GRT chosen at Peg Event Number 2 by the Nash brothers. The location “Centre of the Radio Telescope” was the original March 1958 site. The three trees (a, b and c) are indicated.



Fig. 12. PEG EVENT 3. A screen grab from the movie of the Bowen re-enactment ( of September-October 1959, showing where this re-enactment occurred. This shows an aerial view before the work on the tower had begun. It is not clear if this image is contemporaneous with the Bowen peg event re-enactment; Sid Nash had reported that the tower was not built when the re-enactment occurred. The site of this peg event and the three reference trees are indicated, determined by John Sarkissian in 2019.



Fig. 13. “McCready’s Hill” with construction rubble looking north to the telescope. John Sarkissian photo November 2011. The debris was subsequently removed.



Fig. 14 Photo of the Parkes telescope on 18 Dec 1969, the southwest corner of the site. The windbreaks were planted by Jelbart ten years earlier. Note the 60-foot telescope on a track to the right centre. CSIRO Radio Astronomy Image Archive P9309-4, aerial photo by John Masterson, RPL photographer.



Fig. 15 PEG EVENTS 1, 2 and 3. An aerial photograph showing the positions of all three peg events (1,2 and 3) and the “famous” a,b and c trees. The time of this photo is uncertain, likely in the time frame October or later in 1959 to early 1960. Excavation for the tower began in late September 1959. The MAN crew from Germany arrived in September 1960.