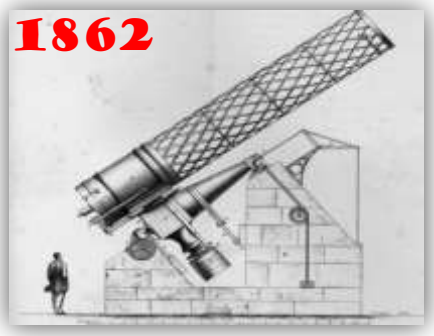
Happy Birthday G.M.T

1869 - 2019

150 YEARS

Erected at Melbourne Observatory in 1869.
It was the second largest telescope in the world.
It was also the largest steerable telescope in the world.

1862

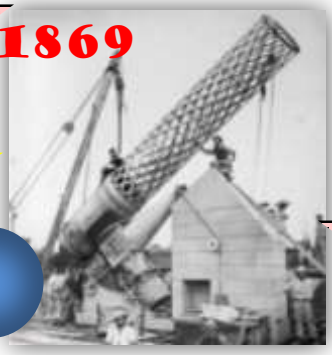


Thomas Grubb's elegant design for the GMT.

2003

The GMT was destroyed in the Canberra bushfires.

1869



GMT was erected at the Melbourne Observatory

2008

MV & ASV members bring the surviving GMT pieces back to Melbourne

1945

The GMT was relocated to Mt. Stromlo

2019

STROMLO OBSERVATORY LOST TO BUSHFIRES!

The following is an excerpt from the ASV Crux Newsletter Feb. 2003

The damage is extreme as seen on television news reports and precious is left of the buildings and instruments. Especially disheartening were the images of the shell of the 50 inch dome and charred remains of the telescope inside. It is well known to many members that parts of the Great Melbourne Telescope were incorporated into this instrument and we should now expect that connection to be severed forever. - *Perry Vlahos 2003 President of the ASV.*

The following is part of a press release from the Marketing and Communications Division of the Australian National University. The Observatory, operated by the ANU Research School of Astronomy and Astrophysics, is one of Australia's leading centres of Astronomical research. The fires destroyed four telescopes, the equipment workshop, eight houses which had been occupied by staff and an administration building. Two office buildings and the visitors centre were spared -- importantly, preserving most of the computer data generated on site in recent years. The Director of the Research School, Professor Penny Sackett, had this to say: "Our losses are presently overwhelming and the scene of Mt Stromlo is one of devastation, but we have retained our most valuable asset, our staff, 100 per cent intact and we are extremely grateful for their safety. The loss of Mt Stromlo Observatory is a devastating blow to Australian research and in particular to the 60 staff and 20 students who made it their workplace. To those staff who also lost homes on Mt Stromlo, these fires have delivered a double blow. It is vital to emphasis that the work of the Research School of Astronomy and Astrophysics will continue, however". "The University has adequate workshop and laboratory facilities to accommodate the valuable equipment contracts which are being fulfilled by the school -- including the $6.3 million contract to build a sharp-eyed imager for the Gemini South Telescope in Chile. Other research projects have been undeniably set back by this loss, although we are still evaluating the full extent of the damage". The ASV extends its sympathies to all the families that have lost property and loved ones in Canberra.

MAY 8TH. 2008 ASV / MV PLANNING TEAM "BRINGING THE GMT BACK HOME"

Jim Pollock (ASV), Richard Gillespie (MV)

Nev Quick (MV) Jim Pollock (ASV), Barry Cleland (ASV)
John Hart (Head, Mech. Eng. Mt. Stromlo)

Nev. Quick, Steve Roberts (ASV)
Kirsty Graham (Dept of Environment, Water, Heritage and the Arts),
Rod Gray MV Collections Storage & Logistics Officer

Barry Cleland, John Hart, Jim Pollock

Jim Pollock, Richard Gillespie

Nev. Quick, Helen Privett
(MV Snr. Conservator, Collection Dept & Access)

THE GMT ON IT'S WAY BACK HOME


THE LATTICE TUBE IS BROUGHT
BACK TO LIFE

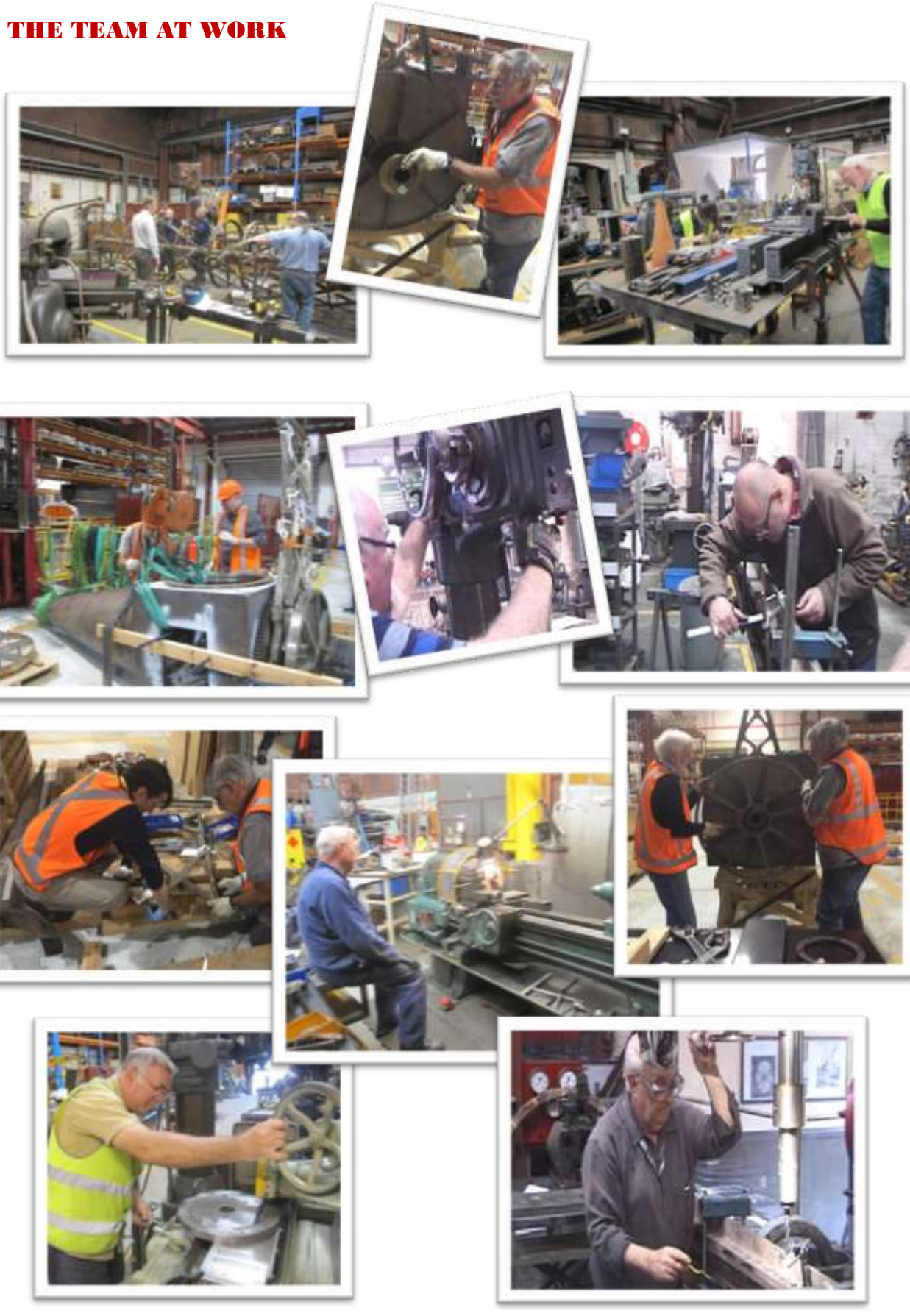
REBIRTH OF THE LATTICE TUBE CONTINUED:



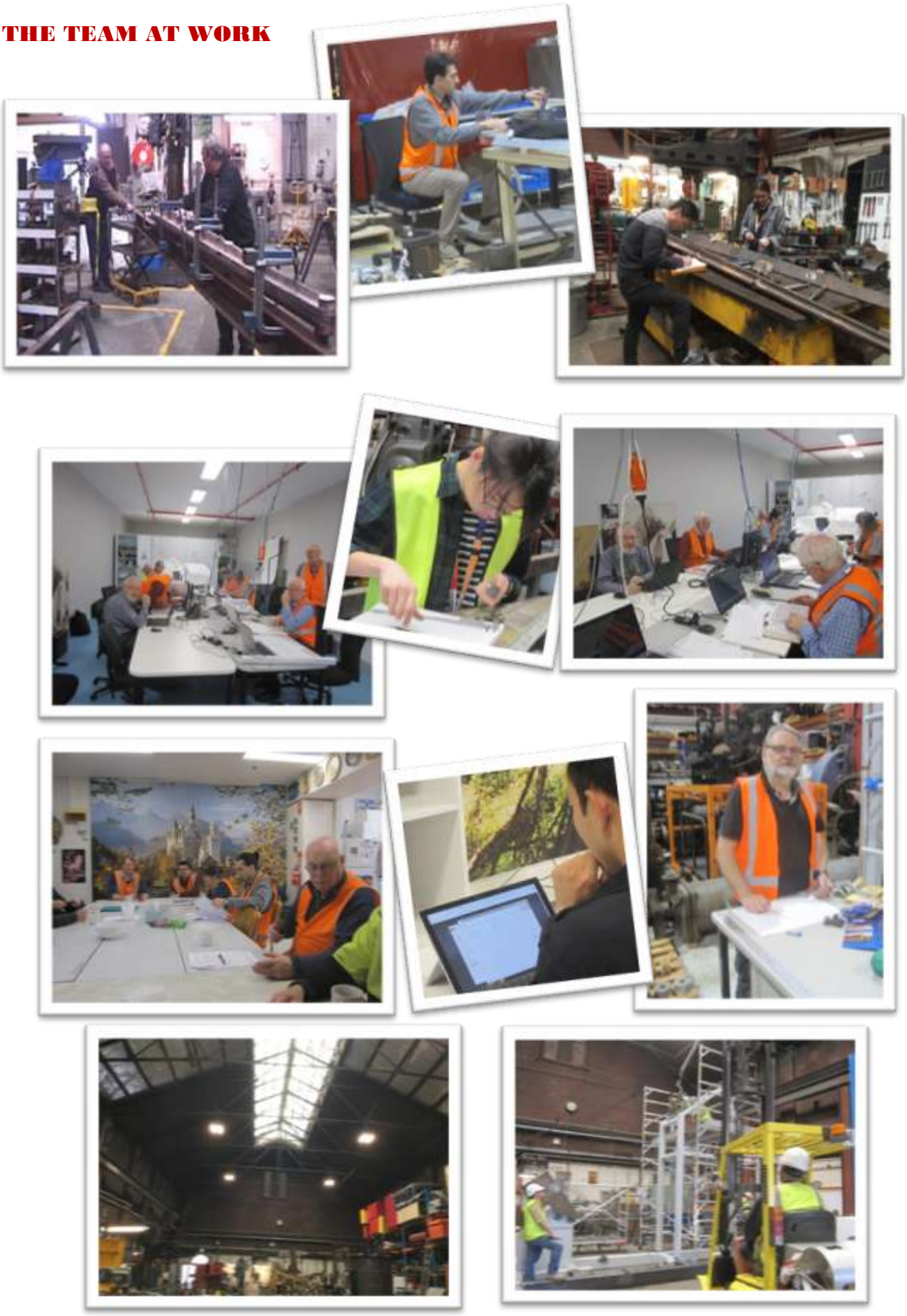





THE TEAM AT WORK



THE TEAM AT WORK



HISTORIC LETTER ON THE GREAT SOUTHERN TELESCOPE COMES TO LIGHT

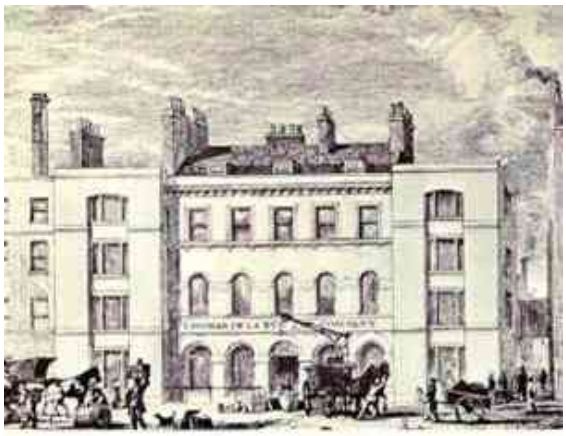
By Jim Pollock

An original historic letter relating to early designs of the Great Southern Telescope recently came to light in a second hand shop in the USA. The letter dated August 1st 1853, was written by Warren De La Rue to his friend, James Nasmyth. The Great Southern Telescope later became known as the Great Melbourne Telescope when the telescope was erected at Melbourne Observatory in 1869.

The Great Melbourne Telescope was the world's largest equatorially mounted telescope for some decades. Built by Grubb of Dublin, it was moved to Mt Stromlo, near Canberra at the end of World War II. After a number of rebuilds at Mt Stromlo, which included the replacement of the original 48-inch (1.2m) speculum mirror with a 50-inch glass mirror of much shorter focal length, the telescope was sadly destroyed in the Canberra bushfires in January 2003.

The proposal to erect a large telescope in the southern hemisphere goes back to around 1850. The idea was supported by the Royal Society and also by the British Association for the Advancement of Science. The most likely location to erect such a telescope was at the Cape Colony in South Africa, where Britain had maintained a presence since 1806 and where Sir John Herschel had observed between 1834 and 1838. A less likely site for the telescope was somewhere in Australia.

In 1862, the legislature of the Colony of Victoria expressed an interest in locating the telescope in Melbourne and in 1865, voted the necessary funds for the project. It should be remembered that at this time Melbourne was just 30 years old and it had only been 14 years since the Port Phillip District had separated from New South Wales. What made this audacious step possible was that the youthful Melbourne was a bustling metropolis with money to spare. The vast wealth flowing from the goldfields and from agriculture allowed funds to l Botanic Gardens, Melbourne University and Melbourne Observatory.



Original office of Thomas De La Rue at 110 Bunhill Row, Finsbury. It was from this address that the letter from Warren de la Rue to James Nasmyth was written. This building remained the headquarters of the De La Rue organization until 1940 when most of Bunhill Row was destroyed by German bombs during the London blitz.

The Royal Society and the British Association formed a co committee to examine all aspects of the establishment of such a telescope and to make recommendations. The committee included some of the brightest names of British science such as Lord Rosse (President of the Royal Society), General Sabine (President of the British Association for the Advancement of Science), Sir John Herschel, Sir David Brewster, John Couch Adams, George Airy, William Lassell, James Nasmyth and earlier, Warren De La Rue.

By the early 1850s both Nasmyth and Warren De La Rue (he actually signs the letter Warren DeLaRue) were independent financially and were able to devote some of their spare time to astronomy and other related pursuits.

Warren De La Rue (1815-1889) was born in Guernsey, Channel Islands, the son of Thomas De La Rue. His family moved to London in 1818 where Thomas established a successful stationery and printing business at 110 Bunhill Row, Finsbury, about 1.5km north of the Bank of England, just outside the limits of the "City".

Warren joined his father's business and became interested in science. In his spare time he conducted experiments in chemistry and electricity and later photography. He was introduced to astronomy by James Nasmyth and in 1850 constructed a 13-inch reflecting telescope using a speculum mirror for which Nasmyth had cast the metal blank. He became interested in astronomical photography the following year and using the wet collodion process, he

James Nasmyth

eventually succeeded in producing photographs of excellent quality. In 1854 he turned his attention to solar photography and devised the photoheliograph. The De La Rue group remains in business today producing high security paper and still prints all the banknotes for a number of countries including those for the Bank of England.

James Nasmyth (1808-1890) was born in Edinburgh into an artistic family and at an early age showed considerable aptitude for engineering, mathematics and design. He was appointed personal assistant to Henry Maudsley, the famous tool maker and engineer in 1829. Following the death of Maudslay, Nasmyth set up business on his own account in Manchester in 1834, manufacturing machine tools, steam engines and later, steam locomotives. Nasmyth invented and patented the steam hammer for forging large castings and later the applied the same principle to the pile driver.

He retired from business in 1856 at the age of 48 to pursue his interest in astronomy. He settled in Kent where he built his own 20-inch reflecting telescope on a fully engineered alt-azimuth mounting. By using a second flat mirror in the telescope tube, he diverted the converging light rays out through the one of the hollow trunnion bearings which allowed the observer to remain seated with the telescope eyepiece at a fixed position (the Nasmyth focus.)

James Nasmyth at the Nasmyth Focus of his 20-inch telescope

The letter contains some hand written sketches of a possible mounting and a structure for housing the telescope. It is not possible to reproduce the letter here in its entirety but the opening paragraph shows that De La Rue was strongly of the opinion that the 48-inch Great Southern Telescope ("the wee four feet") should be mounted equatorially.

110 Bunhill Row

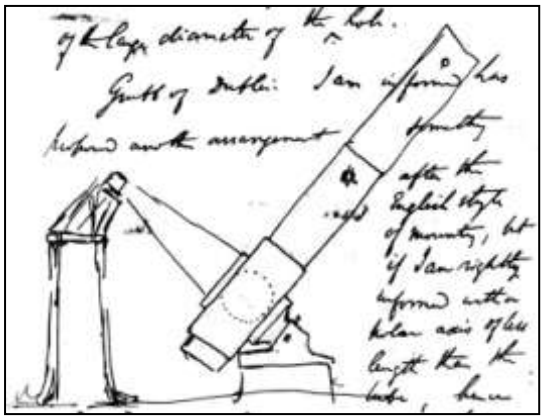
August 1st 1853

"My dear sir,

Your letter of the 21st instant afforded me much gratification as it fully confirms my often expressed opinion of the necessity for a no-compromise-out-and-out Equatorial mounting for the Great Southern Telescope. When we have to deal with a 20 foot mirror it will (possibly?) be advisable to turn one's attention to a hybrid alt-azimuth-Equatorial, but to shrink from mounting the wee four feet on a polar axis would indeed be casting a slur on the Engineering talent of the day."

(The phrase "a 20-foot mirror" refers to the focal length of the mirror, not its diameter. This was a common method of describing telescope mirrors in the 18th and 19th centuries.)

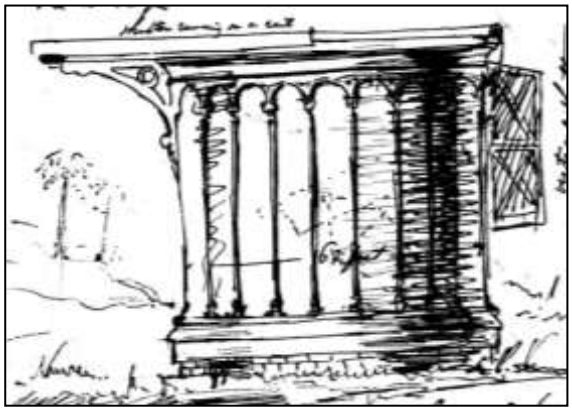
De La Rue's proposed design for mounting the telescope. The final design for the mounting of the Great Melbourne Telescope is strikingly similar to this sketch.



And on De La Rue's ideas for the design of a building for housing the telescope:

> *"The house I would give preference to is of the drum-shape revolving from the ground as this removes much difficulty with respect to the shutters which should be large and covering not less than a 12 feet opening otherwise the telescope would perform badly. No house of such a size could be driven well without some sort of hydrodynamic apparatus such as a water engine which would move it from time to time (readily?) and with steadiness; – the motion being parralel (sic) with the horizon, a clock, even if applied, would have to move at variable rates to suit the different positions of the telescope but as it is not necessary for the house to have a continuous motion, I would prefer such an engine to a clock. I had contemplated a mounting for the telescope similar to my own stand as it presents some advantages and is capable of being made perfectly rigid, the form you propose is equally good and might be made very stiff…"*

De La Rue's suggested design of a telescope house suitable for housing the Great Southern Telescope. Note the 62ft. (about 19 metres) diameter of the building.



Fortunately, the letter was acquired by an ASV member with the intention that it be passed on to the ASV should the Society ever be successful in seeing the Great Melbourne Telescope re-erected in whole or in part. This letter could make an interesting exhibit explaining to a small extent, some of the ideas and concepts that were considered before the final design was adopted.

This article, by Jim Pollock, first appeared in the Feb. / March 2008 edition of the ASV's magazine CRUX.

Note: Readers who would like to research James Nasmyth and his accomplishments in more detail, should read the book James Nasmyth. Engineer: An Autobiography. Edited by Samuel Smiles, LLD, London, 1885. Copies of this charming (and modest) autobiography are available from the ASV library. Alternatively, a copy of the text can be found at http://www.gutenberg.org/dirs/etext96/jnasm10.txt

AFTER A HARD DAYS WORK, SOME OF THE CONSTRUCTION TEAM GET READY FOR A SPRINT TO THE END OF THE WORKSHOP.

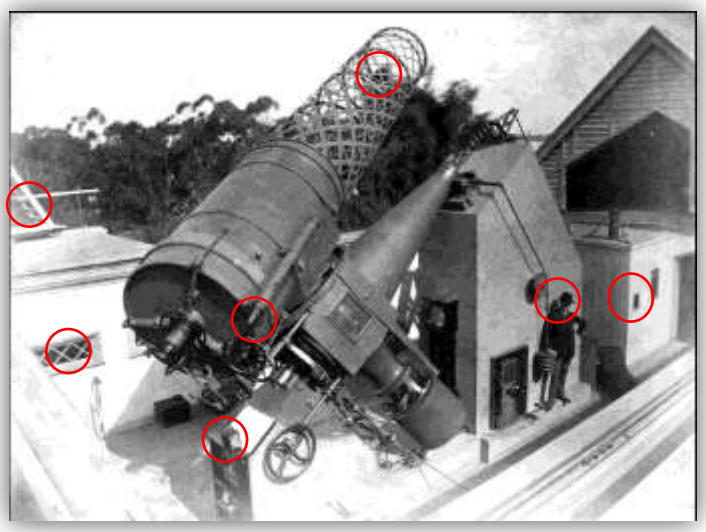
THE GMT RESTORATION TEAM:

Abdullah Ayaz; Abhinav Hira; Allan Davies; Barry Clark; Barry Cleland; Barry.Adcock; Bryan Mooney; Bob Crosthwaite ; Campbell Johns; chetylmz ; Christoph Andrew; Angkadjaja; Dishan Anand; Ian Barry; Frank Marian; Graeme Bannister; Graeme Kerss; Ho-Bin Kim; Jai Cornes; Jenny Andropoulos; Jessica Widjaja; Jim Pollock; Ken.Woolhouse; Laurie Goodison; Mal Poulton; Steve Pattie; Tom Miller; Steve Roberts; Phillip Gossip; Ujashkumar Patel; Son Hoang; Nathan Anderson; Naomi Ardnt-Cooper; Zheng Ong; Mathew Churchward; Simon Brink; Des Lang

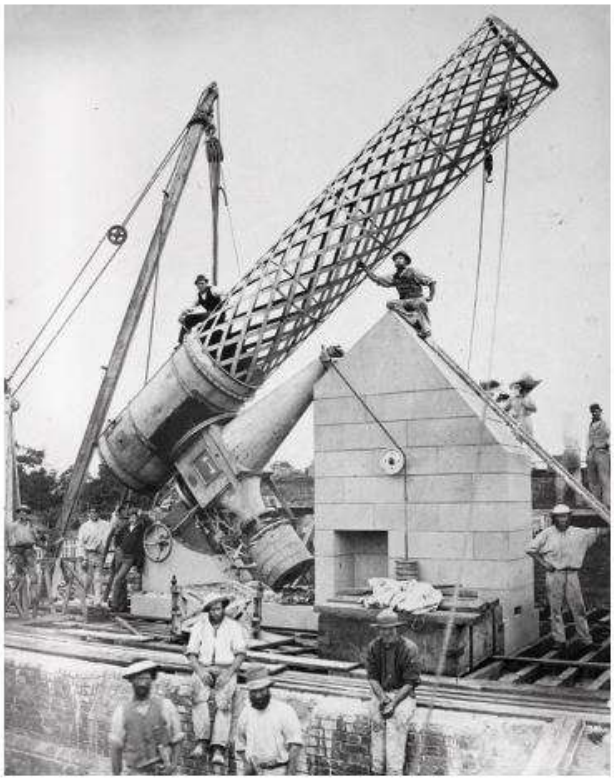
ANSWER TO "SPOT THE DIFFERENCE". IN THE LAST EDITION OF PHOENIX

The following were the changed objects:

1. Shadow behind man's head. 2. Small dark window right of man. 3. Secondary mirror. 4. eye piece on spotter-scope. 5. Lamp on desk. 6. Ladder on building roof. 7. Lattice on windows in rear building on the left.



The Great Melbourne Telescope Stories to Celebrate 150 Years



Hear four expert speakers describe the colourful history of this iconic telescope as it celebrates 150 years since its first light.

Listen to tall tales from its construction in Dublin, Ireland and its glory years at the Melbourne Observatory. Be impressed at how the telescope recorded the first observation of dark matter as a MACHO object. While you may shed a tear at the demise of the telescope in the 2003 Mount Stromlo fires, you will certainly be enlivened by the story of its recent reconstruction and the opportunity to see progress towards its restoration.

WHEN
Sunday 24 November 2019
2pm – 5pm

WHERE
Scienceworks, Pumping Station north boiler room
2 Booker Street, Spotswood

TICKETS & BOOKINGS
$20 adult, $10 concession
Tickets also include entry to Planetarium Show "Capturing the Cosmos"
For online bookings visit:
museumsvictoria.com.au/gmt-stories-to-celebrate-150-years

EVENT PROGRAM

1:50pm	Arrival
2:00pm	Welcome
2:10pm–2:30pm	Inspiration to Installation: late 1840s–1869
2:30pm–2:50pm	The Melbourne Observatory Years: 1869–1944
2:50pm–3:15pm	Viewing of the Great Melbourne Telescope Skeleton. Refreshments available in the Scienceworks Cafe
3:15pm–3:35pm	The Mount Stromlo Years, 1944–2008
3:35pm–3:55pm	Rescue and Restoration: 2008 and beyond
3:55pm–4:00pm	Close Relocate to Planetarium
4:20pm (optional)	Planetarium Show "Capturing the Cosmos"

SPEAKERS

Mr Matthew Churchward
Senior Curator, Science and Technology, Museums Victoria

Dr Richard Gillespie
Great Melbourne Telescope Historian and Author

Professor Jeremy Mould
Director, Mount Stromlo Observatory, 1993-2001

Mr Barry Adcock
Senior Research Associate, Great Melbourne Telescope Restoration Project