



Report on the Tony Scaife 20" Dobsonian Mounted Newtonian Telescope "The TS20"

Summary

The TS20 became fully active later in 2022 and saw a great deal of action during the first few meetings of 2023, following a number of modifications and additions.

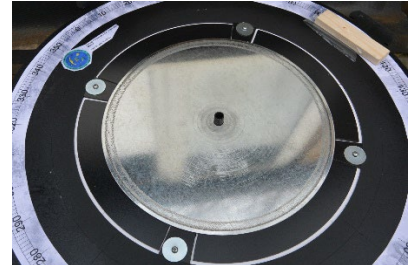
The telescope is now a staple of Club observing sessions and has demonstrated the advantages of a light bucket all too well.

Modifications and additions

Setting circle	-	completed
Levelling table	-	completed
Reinforced struts	-	completed
Polarising filter	-	added
Observer's steps	-	added
Focus adjustments	-	planned
Steering arm	-	planned

- **Setting circle** "push to" modification.

The addition of a 600mm diameter compass rose on a rotating plate (June 2022) allows the TS20 to be slewed to an azimuth setting with an accuracy of about half a degree. The addition of a digital inclinometer on an adjustable cradle allows the setting of an altitude angle on the scope with a similar accuracy.



Early trials of the push too arrangement were disappointing and it was realised that the telescope needed to be levelled to achieve consistent and accurate results.

- **Levelling table.**

A robust and adjustable levelling table was constructed in late 2022 and added to the TS20 for the first meeting of 2023. The results are much improved slewing accuracy. Although the table does need some setting up time, the results seem worth it.





- **Struts reinforcement**

The aluminium tube struts showed some signs of crushing resulting in slight movement and occasional loss of collimation. The telescope was disassembled in the summer and the strut ends reinforced with metal filled polyester resin, redrilled and the scope reassembled.

The strut ends will now accept much tighter bolts and the issue of collimation loss seems to be much reduced/removed.

- **Polarising filter addition**

The TS20 collects so much light that observing the full moon without a filter can be very painful although is unlikely to be harmful. A 2" polarising filter has been added to the telescope's equipment. The polariser is effective and has allowed some stunning views of the almost full moon in recent months.

NB: observing the full moon during early twilight usually does not require the filter as our pupils are not dilated enough to cause discomfort.

- **Observer's steps**

A simple arrangement of metal folding steps coupled with a vertical handrail has been tested at recent club meetings when observing objects near the zenith. The arrangement seems to work well although there is some risk. To mitigate risk the steps should only be used by members when supervised by another member.

Assembly of the steps at the start of a session should be checked by two or more members before being made available for general use. Members use these steps at their own risk.

- **Focus adjustments**

It has been reported that there is an issue with achieving focus with 1¼" eyepieces. There does not appear to be sufficient travel in the focuser to achieve focus and this is being investigated.

A possible solution is to move the secondary mirror closer to the primary so that the point of focus moves out from the centerline of the telescope.



- **Steering arm**

The TS20 is usually steered by pulling on one of the struts or the secondary mirror housing. This is likely to cause collimation issues longer term, so some form of steering arm is planned. The steering arm would fix directly to the rocker box and allow the observer to manoeuvre the scope body without putting any stress on the optical path components or supports.