A NOTE ON THE SPECTRUM OF COMET AUSTIN (1982g)

Dear Sir

Using the 1040 mm reflector, three spectrophotometric scans of the comet Austin (1982g) were obtained in the wavelength range λλ3000–8000 Å on 1982 September 5, 8 and 9 at 15h, 14h and 14h UT respectively. The heliocentric distances of the comet were approximately 0·690, 0·702 and 0·710 a.u., and geocentric distances were 0·950, 1·040 and 1·070 a.u. respectively. The apparent magnitude of the comet head was about $6^m·5$.

The most prominent features are: CH at λλ 3920 and 4313 Å; CN at λ 4180 Å; C_2 at λ 4737 Å, λ 5165 Å and λ 5635 Å; Na I at λ 5890 Å. The identification of the features was made by using Table III of Swings and Haser's *Atlas of Representative Cometary Spectra,* Louvain (1956).

The Na I emission was present during observation on September 5, but it was absent in the other two nights. C_2 (5165 Å) band was the strongest in all the three nights. The CH (3920 Å) feature was weak on September 5, and on September 8 and 9 it became as strong as the C_2 (4737 Å) feature. The strength of CH (3920 Å) is increasing rapidly as the heliocentric distance of the comet is increasing.

Yours faithfully

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MOUNTING A FLAT IN A NEWTONIAN REFLECTOR

Dear Sir

I refer to the BAA *Journal* of 1971 [**81** (6), 487], in which Mr G. Bromley wrote a letter describing and illustrating an ingenious spring-loaded swivel-jointed flat-holder.

It seemed to me that the three adjusting screws would be difficult of access, particularly in a solid-wall telescope tube, and most likely require a spanner to turn them. I therefore modified his design as illustrated so that three thumbscrews 'B' are readily accessible to the hand at the open end of the telescope, and a wingnut is substituted for the hexagon nut. In consequence, no spanner is needed to lock or unlock the flat-holder or to adjust it, and this avoids risk to the main mirror of an inadvertently dropped spanner.

The sequence of adjustment is as Mr Bromley described, which I reiterate for the benefit of readers who may not have the issue of the *Journal* to which I refer, and is as follows:

1. Release wingnut 'A'. (Spring 'C' now maintains tension on the spindle, thus holding the diagonal block in position against the rounded ends of the three adjusting screws 'B'.)
2. Adjust thumbscrews 'B' by
   (*a*) turning one or other of them, thus tilting the block,
   (*b*) turning all screws equally, thus moving the block bodily along the centre-line of the main mirror,
   and rotate the block by hand about the spindle centre-line.
3. Tighten wingnut 'A', thus locking movement of the block in all directions.

A few notes on construction may be of interest. The spider centrepiece was machined from round brass bar and the diagonal block from round aluminium bar, thus lessening the possibility of cathodic corrosion of the flat which is held in place by a few blobs of silicone rubber adhesive and can be removed with a fine, sharp knife.

The swivel ball-joint was made from parts of control rod ball-and-socket joints obtained from Whiston's years ago. The threaded shank of the ball is screwed into the axial spindle drilled and tapped to receive it, and the ball-joint is completed by two opposing matching-radius threaded plugs tapped into the diagonal block and screwed home to allow universal movement without play. The swivel ball could, of course, be machined from the solid bar of the axial spindle.

The machining of the 45° surface of the diagonal block requires the construction of a 45° angle-bracket, on which the work is mounted and bolted to the faceplate of the lathe.

Dimensions are not given, but the drawing is to the scale of my construction to take a 50 mm or 56 mm minor-axis elliptical flat.

Having previously made several unsatisfactory and difficult-to-adjust flat-holders, I can testify to the excellence of Mr Bromley's basic design which I toyed with for a decade before deciding to construct this modified version. The adjustments are fine, accurate and simple to make, and the positive locking device holds the diagonal block very securely.

I am grateful to Mr Bromley for his original design and recommend it, or this modification, to members of the Association who like to construct their instruments.

Yours faithfully

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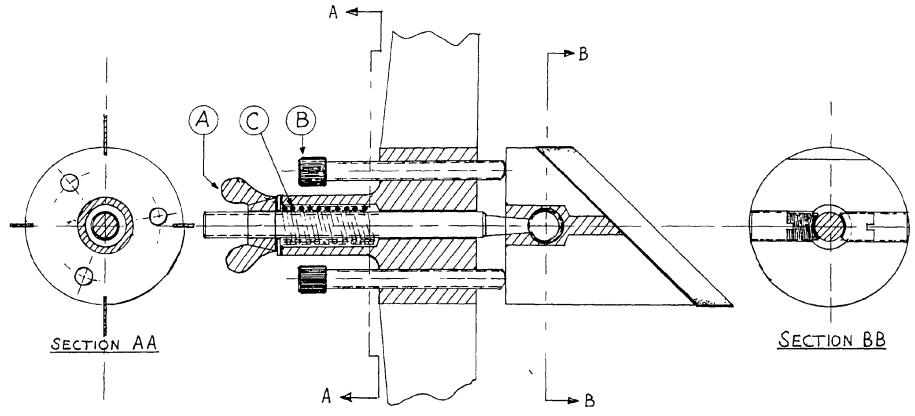

Dr Hemphill's modification of Mr Bromley's method of mounting a flat in a Newtonian reflector.