

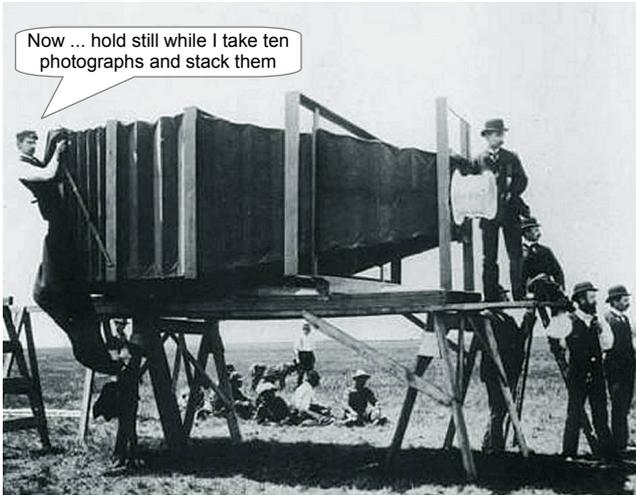


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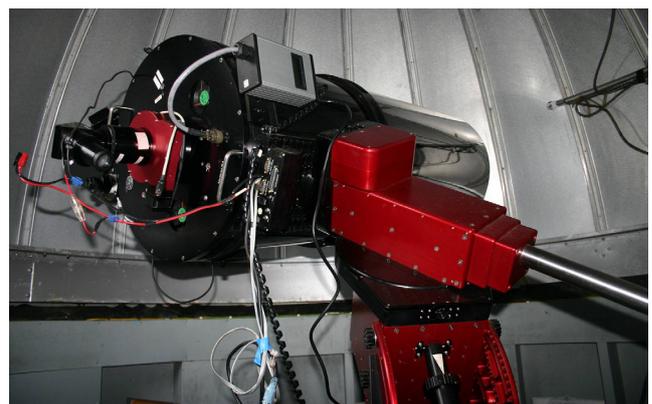
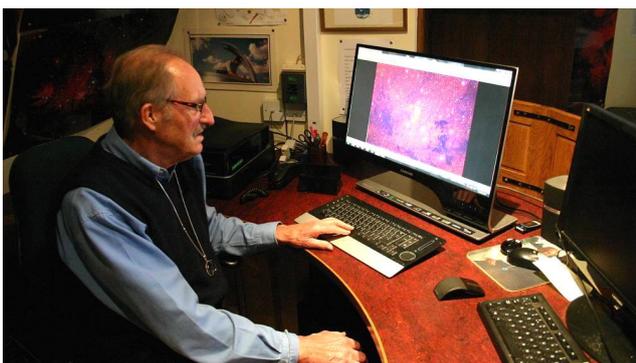
The photograph in the previous *Technical Tips* shows Mr and Mrs Grewcock looking at a window broken by a piece of the meteorite which fell on Barwell, Leicestershire, on Christmas Eve 1965. It was correctly identified by Brian Ingram (of Hinckley, close to Barwell), Ron Arbour, Alan Snook, and Tim Withers. Many pieces of meteorite – some of them of considerable weight – rained on Barwell, but the event was not reported until the beginning of January. Howard Miles – a longstanding Member and Director of the Association and a noted authority on fireballs and meteorites – at that time lived in Coventry, and between Christmas and the new year, still innocent of the event, drove through Barwell three times before being called in to investigate, by which time, many pieces of meteorite which some of the villagers thought were rubble which had fallen off a lorry had been thrown away and lost.

This issue's challenge is to identify the eminent gentlemen above. Clue: physicists, not astronomers.

SBIG cameras

This issue cannot be considered entirely as a technical tip, but neither is it an article suitable for *I&I News*. Instead, I am acting in my other capacity as Curator of Instruments.

After producing outstanding results in imaging over many years, Gordon Rogers has decided to turn to visual observing, and has generously donated his three SBIG CCD cameras to the Association. These are now available for loan to Members. The Regulations for the Loan of Instruments, together with other conditions, are included on the last page of this newsletter.





Model: ST-7
Serial No: 97061252

CCD system

Two CCDs in parallel
Kodak KAF-0400 (imaging)
Resolution 765 x 510 pixels
Pixel dimensions 9 μ x 9 μ
Array dimensions 6.9 x 4.6 mm, 8.3 mm diagonal

Texas Instruments TC211 (guiding)
Resolution 192 x 164 pixels
Pixel dimensions 13.75 μ x 16 μ
Array dimensions 2.64 x 2.64 mm, 3.73 mm diagonal
Anti-blooming Option available

Electronics

Binning 2x2 noiseless/software selectable
Full well unbinned (Ke-) 85,000
Full well binned 2x2 (Ke-) 40,000
Readout noise (e-) 15 RMS double correlated sampling
Dark current <0.2e-/pixel/sec at -10° C

Hardware

Communications port Parallel
Analog/digital converter 16-bit
Digitization rate, full frame 11.5 sec at 33 KHz
Shutter speed 0.11 sec to 1 hour
Cooling from ambient -35° C
Power requirements 115V ac, 12V dc optional

Further information (including variants)

<http://archive.sbig.com/sbwhtmls/st7.htm> <https://www.sbig.com/site/assets/files/18222/st78910man.pdf>
<http://www.company7.com/sbig/products/st7.html>



Model: ST-8XE
Serial No: 819905524XE

Colour Filter Wheel: CFW-8
Serial No: [None]

Adaptive Optics: AO-7
Serial No: 9907526

CCD system

Kodak KAF-1603ME + TI TC-237
Pixel array 1530 x 1020 pixels, 13.8 x 9.2 mm
Pixel dimensions 9 μ x 9 μ
Total pixels 1.5 million
Full well capacity ABG ~50,000 e-
Full well capacity NABG ~100,000 e-
Anti-blooming KAF-1603ME is NABG only

Readout

Exposure 0.11 to 3600 sec
Correlated double sampling Yes
A/D converter 16 bits
A/D gain 2.5e-/ADU
Read noise 15e- RMS
Binning modes 1x1, 2x2, 3x3
Pixel digitisation rate Up to 420,000 pixels per sec

System

Cooling, standard Single stage, thermoelectric, active fan, water-assist ready
Power 5V dc at 1.5 amps
12V dc at 0.5 amp
Computer interface USB
Guiding Dual CCD self-guiding

Dimensions

Optical head 5 x 3 inches
CPU None (all electronics integrated into optical head)
Mounting T-thread
Back focus 1/4-inch and 2-inch nosepieces
0.92 inches

Further information

<http://archive.sbig.com/sbwhtmls/st8.htm> <https://www.sbig.com/site/assets/files/18222/st78910man.pdf>



Model: ST-10XE
Serial No: 100202231XME

Colour Filter Wheel: CFW-8A
Serial No: 0109

CCD system

Kodak KAF-3200ME + TI TC-237

Pixel array	2814 x 1472 pixels, 14.9 x 10 mm
Pixel dimensions	9 μ x 9 μ
Total pixels	3.2 million
Full well capacity	~77,000 e-
Dark current	0.5e-/pixel/sec at 0° C
Anti-blooming	n/a

Readout

Exposure	0.12 to 3600 sec
Correlated double sampling	Yes
A/D converter	16 bits
A/D gain	1.3e-/ADU
Read noise	8.8e- RMS
Binning modes	1x1, 2x2, 3x3
Pixel digitisation rate	Up to 420,000 pixels per sec

System

Cooling, standard	Single stage, thermoelectric, active fan, water-assist -45° C from ambient typical with water, -35° C, w/air only
Power	5V dc at 1.5 amps ±12V dc at 0.5 amp
Computer interface	USB
Guiding	Dual CCD self-guiding

Dimensions

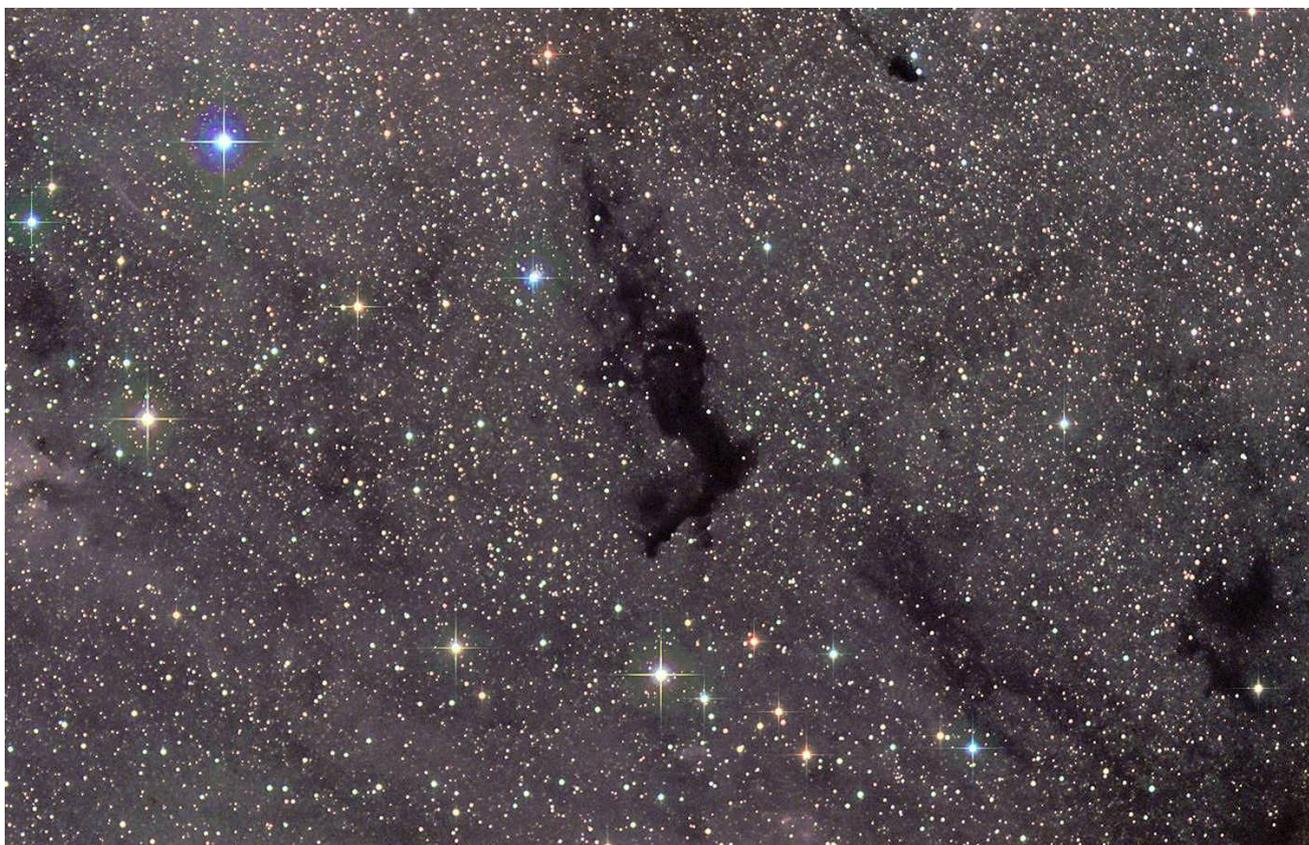
Optical head	5 x 3 inches
CPU	None (all electronics integrated into optical head)
Mounting	T-thread
Back focus	2-inch nosepiece 0.92 inches

Further information

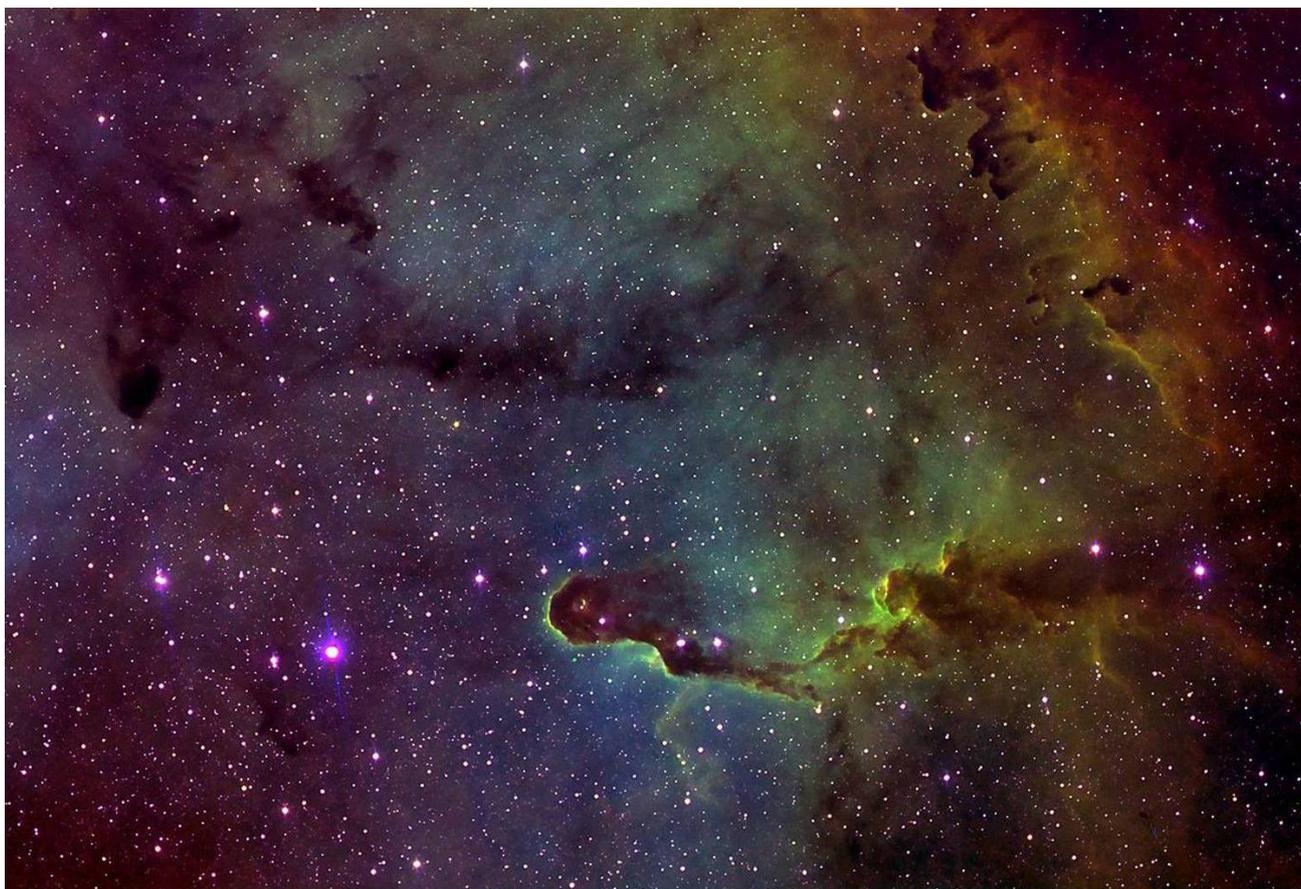
<http://archive.sbig.com/sbwhtmls/st10.htm>

<https://www.sbig.com/site/assets/files/18223/usbmanrev14.pdf>

Example images



Barnard 173-4 in Cepheus



IC 1396 in Cepheus

Regulations for the Loan of Instruments

- 1 The applicant must be a Member of the Association of at least two years' standing, and must meet such other requirements as shall be notified on application.
- 2 A value shall be placed on the instrument at the time of loan, and the borrower shall be responsible to the Association for the return of the instrument or the said value.
- 3 The instrument shall be on loan for one year, such loan to be renewable, subject to review.
- 4 The instrument shall not be taken out of the United Kingdom without the consent of Council.
- 5 The instrument shall be returned immediately on the borrower ceasing to be a Member of the Association.
- 6 The instrument shall be returned in good order, fair wear excepted, and all damage beyond that due to fair wear shall be made good by the borrower.
- 7 All costs of packing and carriage shall be borne by the borrower.
- 8 These rules shall not be considered as interfering with the right of Council to call for and obtain the return of the instrument at any time.

An application for loan, including details of previous experience and a proposed plan of work, should ideally be supported by another Member (preferably a Section Director), and in return for the loan the borrower is expected to submit observations to one or more of the Observing Sections. Insurance of the instrument while on loan is the responsibility of the borrower. In addition to the CCD cameras, the following instruments are available for loan:

150-mm reflector by Tal
10-inch reflector, Dobsonian mount
200-mm SCT by Meade
8-inch Maksutov, no mount
90-mm f/13.8 Meade ETX

Additional specifications can be supplied on request. Older instruments are also available, but require extensive refurbishment. All enquiries and applications should be addressed to myself as Curator of Instruments.