



The *Variable Star*

OBSERVER

Number 16

October 1992

Monthly

Editor: Tristram Brelstaff, 3 Malvern Court, Addington Road,
Reading, RG1 5PL. Telephone: 0734-268981

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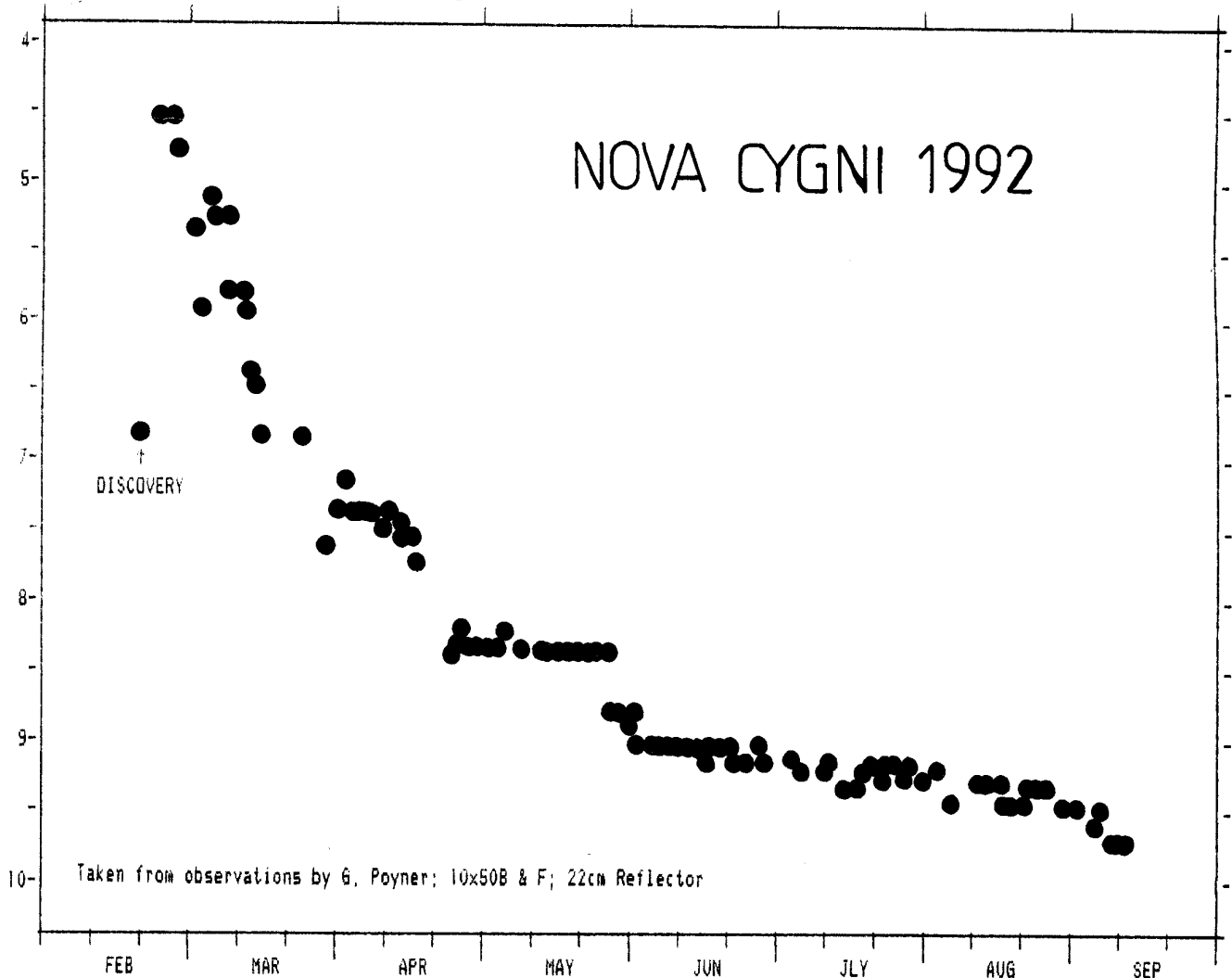
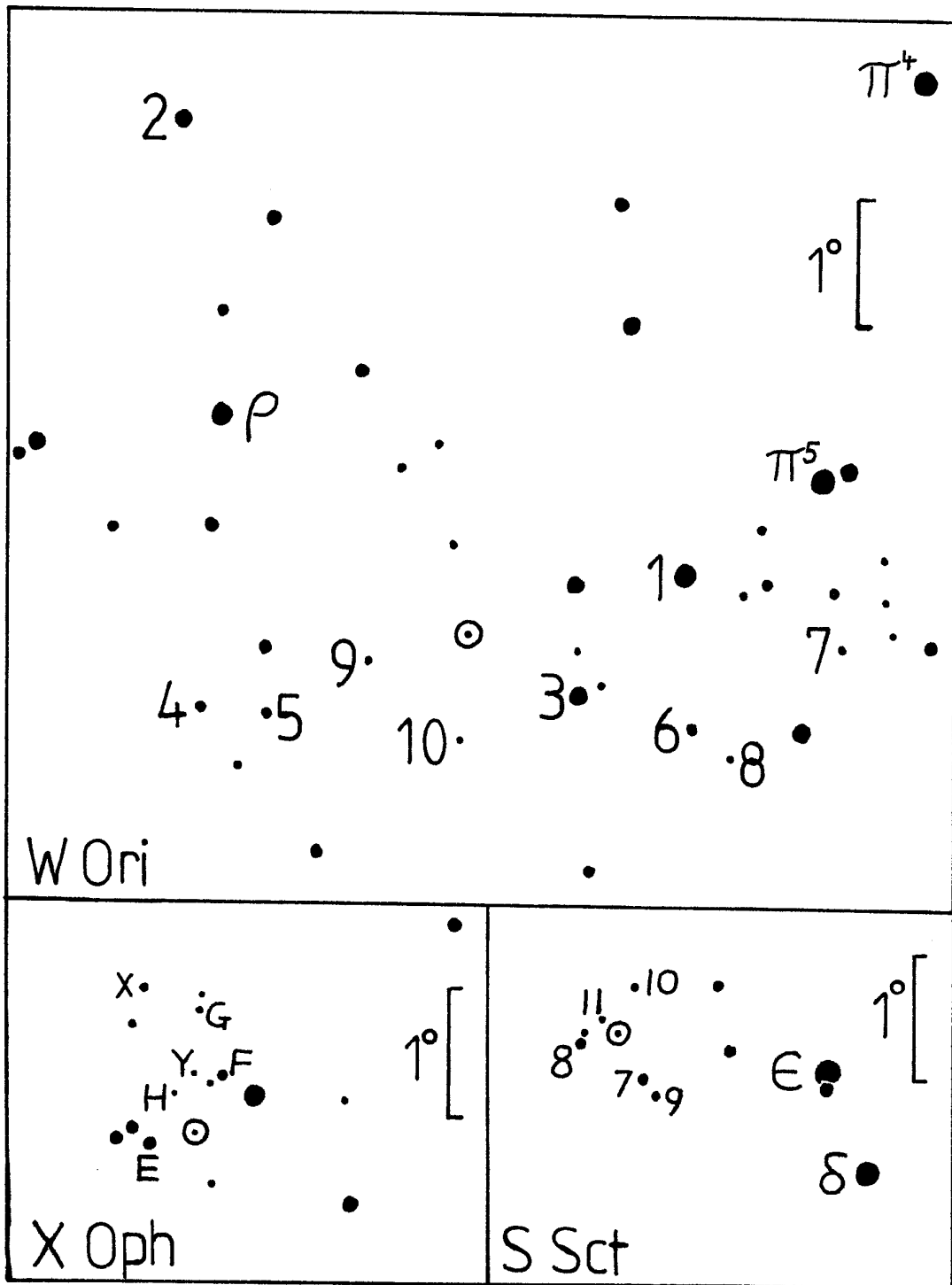


Chart Checking

John Toone, the VSS Chart Secretary, has been improving and redrawing some of the VSS charts in preparation for a new Binocular Chart Booklet. From what I have seen of it, this should be even better than the first one. However, there are still a few queries which really need to be cleared up before it



is published. It would be very useful if observers of the stars involved would check out the following points and send their results to John at 2 Hilton Crescent, Boothstown, Worsley, Manchester, M28 4FY.

Omicron Ceti

Estimate the brightness of star K (= Mu Cet) relative to H (= Xi2 Cet) and J (= Xi1 Cet) [As some of you might recognise, this query arose from an article in VSO 5].

R Coronae Borealis

Estimate star C (= Upsilon CrB) against A (= Pi CrB) and B (= Omicron CrB) [And this one arose from an article in VSO 10].

X Ophiuchi

Estimate X and Y against E, F, G and H (see mini-chart).

W Orionis

Estimate the stars labelled 1 to 10 against each other (see chart).

S Scuti

Estimate stars 10 and 11 against each other and against stars 7, 8 and 9 (see mini-chart).

Letter from a Photoelectric Photometrist

The following has been taken from a letter from amateur photometrist, John Watson. John has been contributing photoelectric timings of minima to the VSS Eclipsing Binary Program for quite a few years now and was mentioned in VSO 11 as having provided observations which confirmed Roger Pickard's prize-winning work on VW Cephei.

As you will appreciate (though many people apparently don't), getting PEP results is a bit of a slow process, although in the past I have tended to concentrate on short-period EB or EW binaries where one can get a timing for the minimum of a star in one night observing; more recently, I have been looking at eclipsing binaries with longer periods, and each star, the weather being what it is, becomes virtually a full-time task for many months. At 78 years, my tolerance of long cold sessions diminishes! I spent most of my observing time last winter trying to establish an exact period and ephemeris for HD 21155 (IAU Inf. Bull.No.3442 refers) and still haven't got sufficient points on the graph - am about to mount another attack it again this season.

I was interested to read your item about Roger Pickard's success in winning joint second prize in the Stargazers Trust competition for his PEP light curve of VW Cep.; I can amplify the sequel. As you say, he sent in his excellent entry at the last moment, a very stout effort when he was still ironing out the problems of a new telescope mount, and as chairman of the Trust I was one of the judges. As I had myself measured the light curve of this star a couple of years previously, I looked up my results, and was disturbed to find that our calculated O-C findings were in complete disagreement. I asked Dave Stickland (another judge) whether he could sort out this apparent discrepancy, and he passed the problem on to Chris Lloyd, which is how he came into the picture. Chris used the Rutherford Appleton computers and with corrected and pretty sophisticated maths found that our results were in fact in complete accord. As they were evidence of an apparent abrupt change in period, he suggested that if we repeated our observations several times for confirmation (which we did) it would be worthy of a formal paper, and this duly transpired. Such are the benefits of close amateur/professional cooperation!

I was also very glad to learn that Jack Ellis automatic telescope was being put to use again at Crayford, because I collaborated rather fully with him over its electronics. I have had a lifelong side-interest in electronics (although my knowledge is nowhere near up to professional standards) and one of the things Jack needed for photon counting was an amplifier/discriminator module, for which EMI wanted about £300 purchase price which seemed prohibitive. I happened to have previously designed and used an effective module so I was able to construct one for him, also his HT power unit which was a hotted up version of that described by Andy Hollis and Terry Platt; with Peter Ellis we spent many hours here debugging his associated BBC computer software and hardware for reading and recording counts.

I mention this because having myself had to learn about PEP the hard way on a "teach yourself" basis, I found the available information

pretty scattered and time-consuming to locate, so I have since compiled a collection of circuit diagrams (with brief explanatory and constructional details) of all the various modules likely to be needed to help "do-it-yourself" newcomers to this field. These include DC and photon-counting amplifiers, power supplies, and counter-timer systems with either serial or parallel computer interfacing. The circuitry is not that elegant, but the numerous microchips are readily obtainable and as inexpensive as possible, and all the modules have been made and tried out on the stars so I know they actually work! I am always happy to send copies of these diagrams to anyone who feels the need (or could improve them), as I am always looking for new recruits, and although I myself found the development of various systems to be a somewhat difficult and daunting task, the whole thing should be child's play for the younger computer-familiar generation.

The Astronomer Annual General Meeting, 1992

Based on notes taken by Richard Fleet

The 1992 TA AGM took place on 5th September at the Humfrey Rooms of the Northamptonshire Natural History Society in Northampton. About 60 people attended. The meeting was chaired by Denis Buczynski.

Guy Hurst opened the meeting with the usual report on the state of the magazine and its associated organization. The membership fell slightly from 289 in 1991 to 286 in 1992, a smaller drop than in previous years (maybe the astronomical recession is coming to an end? - Ed). There has been a large increase in the number of communications with professional astronomers but Guy said that the amateurs still needed more feedback on the use that was being made of their observations. About a hundred 'discoveries' had been reported to TA during the year and, of these, about 20 by Mike Collins and one or two others had been confirmed.

Next Daniel Fischer, of Koenigswinter in Germany, spoke on eclipse photography. He was followed by George Alcock who described his astronomical career. As this has already been covered in VSO 13 we won't repeat it here. However, there were a couple of points that are worth mentioning: George says that he only saw Nova Herculis twice before it faded back into oblivion (this makes me feel much better about having missed it completely! - Ed). He also said "Unless you are mad, don't try to find things visually - with all the equipment that is now available, visual searching is on the way out" (I think that George's own achievements contradict this - Ed). Nick James was the next speaker, on the subject of stepper motors for telescopes, and then Francisco Diego spoke about photographing eclipses using a vignetting disk (rather than a radial filter).

On display during the meeting were a set of light-curves produced from VSS observations by Dave McAdam and his team of helpers. Among them was U Mon 1982-91 which showed a range of 5.5-8.0 but which also showed a scatter of two magnitudes in places (there must be something wrong, somewhere, to produce such large scatter in such an easy star - Ed). According to Richard Fleet, plotting all of the observations individually gives a much clearer view of what is going on than just the mean points. There was also a light-curve for R Aquila 1939-1987 and also, over shorter time-spans, for R And, W And, AB Dra, AH Dra, RU Her, SS Her, AC Her, AH Her and U Ori.

After tea, Maurice Gavin talked about CCD's. Their red-sensitivity makes them especially good for picking up faint red variables. He mentioned that software was available for doing 'blink' comparisons of images to detect changes. He also mentioned the possibility of doing time-lapse image sequences of variable stars in action (these could be quite useful for those who give talks on variable stars - Ed).

To be continued