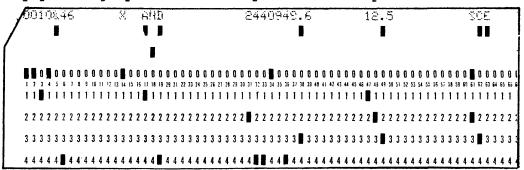## Report of The Ad Hoc Committee on Data Processing.

In the previous report of this Committee no workable solution to the problem of assisting AAVSO Headquarters with data processing was recommended, although the use of a hand-model, stylus-operated IBM "Port-A-Punch" was demonstrated. Three large-volume observers have since tested this apparatus and found it far too slow and too subject to error to be useful.

Many high schools currently offer courses in computer programming, and while computer time is at a premium, the associated key-punch equipment is often idle. An arrangement was made with Darien High School allowing the writer and one other person to use the key-punch machine at times when classes were not in session, and within two weeks of part-time work the writer had gained sufficient proficiency to be able to card-punch at a rate much faster than that at which he normally types his monthly reports. Each card MUST be verified or proof-read before it is sent to Headquarters, and this process takes up enough time that the whole operation takes about the same time as typing a report.

Headquarters has no convenient way of converting punch-cards to printed sheet form, so it is necessary to do this at the source. In our case the high school does not have a printer capable of reproducing the type of mixed data (numeric and also alphabetic) on our cards. We therefore approached a local company which has in-house computers, obtaining an agreement from them to print out such monthly reports as necessary.

The Committee submits that this type of arrangement may be possible with many local schools. Other possible sources of key-punch equipment are local business schools, colleges, and businesses. Often members of local astronomical societies are employed by such places, and may be able to make suitable arrangements. In our case the high school students in courses using the key-punch equipment offered to help with the work. In general the project and its objectives were well received by all parties contacted, and offers of help were numerous. To date no such outside help has been used since the two operators have been able to not only keep up with their own observations, and those of several other observers, but have been able to work on older observations. In effect, we have become an area key-punch center serving several observers. This will relieve Headquarters of the need to punch these cards and hasten the day when they will be punching current observations as received.

For those wishing to aid Headquarters by doing their own key-punching operations a sample card is reproduced below.

Since the computer will not read an underline it is neces-
sary to denote positive or negative declinations by inserting
the proper sign in the designation. The use of & for + is a
carry-over from earlier model key-punch machines used in the
beginning of the program at Headquarters, and must be con-
tintued for uniformity.

A few notes for those totally unfamiliar with key-punching:
The operation of a typewriter-style keyboard causes the key-
punch machine to automatically punch into the card the holes
representing to the computer the character desired. At the
same time the character is printed at the top of the card,
allowing the card to be read by the operator for visual veri-
fication. A special program card is used to guide the machine
in a number of automatic operations. This causes the
machine to automatically skip to the next data-field position,
and to repeat information which remains the same for all cards.
When punching many observations of the same star, the machine
auto-repeats all data except the date and magnitude, thus
allowing extremely rapid operation.

Print-outs used as monthly reports to Headquarters should
approximate the standard format of the printed report forms
supplied to observers (see sample below). Each page should be
identified by the heading lines, and should allow space for
Headquarters to place their stamp for date of receipt, etc.
The last page should give the totals of observations, stars
observed, and inner sanctums. No more than 50 observations
per page should be listed, even if more space is available.
At the present it is not necessary to submit punched cards
each month. It may be easier to ship larger batches as they
accumulate. Before working on any observations other than
current ones check with Headquarters to avoid duplication of
effort.

Cards should be handled with great care since the computers
in which they will be used require perfect cards.   Cards
should be packed with great care. The boxes in which the
cards are sold provide good packing for large batches, and are
easily cut down. These boxes are not sufficient for shipping
and should be protected by an outer carton.

The writer would like to express his deepest appreciation
to William L. Dutton of Darien, Ct. for his tireless assist-
ance in punching many thousands of cards.

Charles E. Scovil

SAMPLE REPORT

VARIABLE STAR OBSERVATIONS FOR THE AAVSO

REPORT NO. 80, PAGE 1 OF 5
FOR THE MONTH OF MAY, 1972

CHARLES E. SCOVIL, 15 DOVER RD. WESTPORT, CT.
TIME, GMAT. 22 INCH REFL. & BINOCULARS

(stamp: LEAVE ROOM FOR STAMP)

0050&60	GAMMA CAS	2441444.83	2.2	SCE
0641&28A	IR GEM	2441444.56	13.4	SCE
0641&28A	IR GEM	2441446.63	13.9	SCE
0641&28A	IR GEM	2441449.59	14.5	SCE
0641&28A	IR GEM			SCE
&&00&23	NV CEP	2441444.81	13.8:	SCE
2219&55	SU LAC	2441444.84	10.8	SCE

TOTAL OBSERVATIONS 172, TOTAL STARS 122,   SANCTUMS 84

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