Survey for variable stars and exoplanetary transits from Holomon Astronomical Station

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Target field selection-Observation Method

- A field of 9 deg2 with coordinates R.A.:08 00 00 ,DEC: 33 30 00 in Andromeda.

- Selection of the field was based in probability to detect a hot-Jupiter transit.

- The field contains about 7500 stars and has a probability of 82% to detect   a hot-Jupiter transit (Heller et al,2010).

- Observations were undertaken with an Astrograph during 10 continuous nights, using R-filter.

- We focused on stars with magnitude range 12-15 mag.

- We finally took 690 frames with 120sec exposure time.

Data Reduction

We have developed the ThReT pipeline in order to do:

- Dark, flat and bias correction

- Photometry

- Astrometry

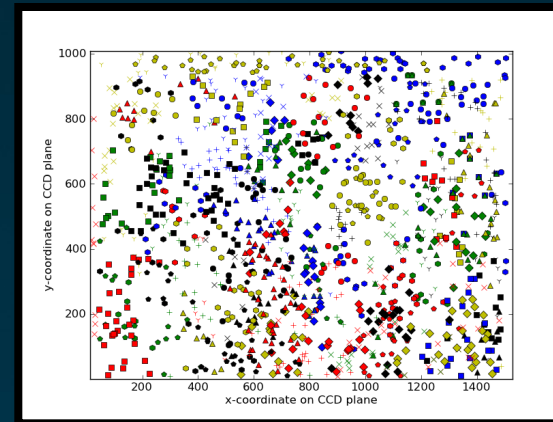- De-trending

- Transit like signals detection

Figure1.Trends positions on CCD's plane.

Results

In order to check our equipment we observed the transits of **Hat p 19-b**, **WASP 33-B** and **XO 3-b**.

From the ThReT project we observed 20 new variable and binary stars. In 8 of them we have full phase.
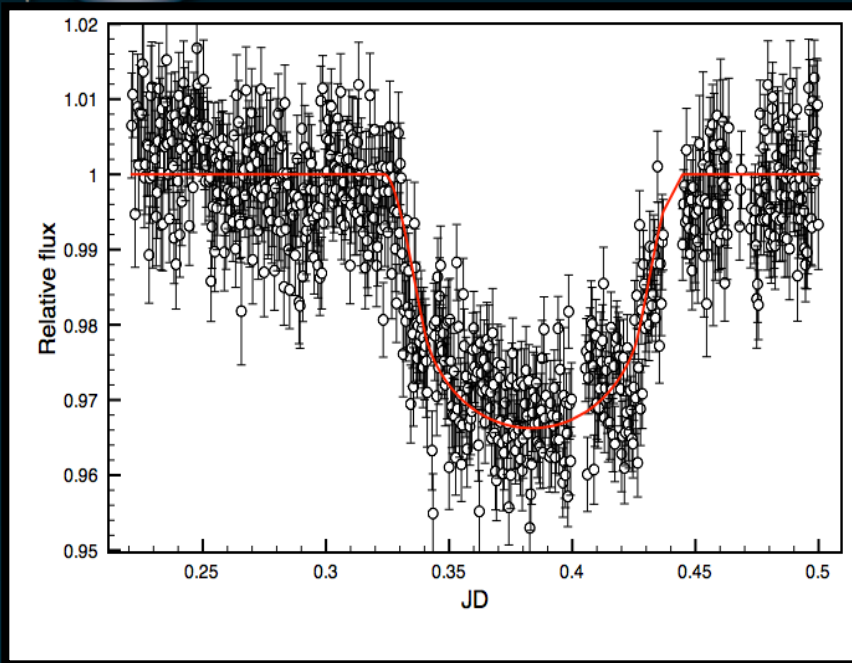

Figure 2. The Transit of Hat P 19-b

Future work

Our work now is to continue the observations in the same field in order to study more the new variables and also to detect stars with slow variations.
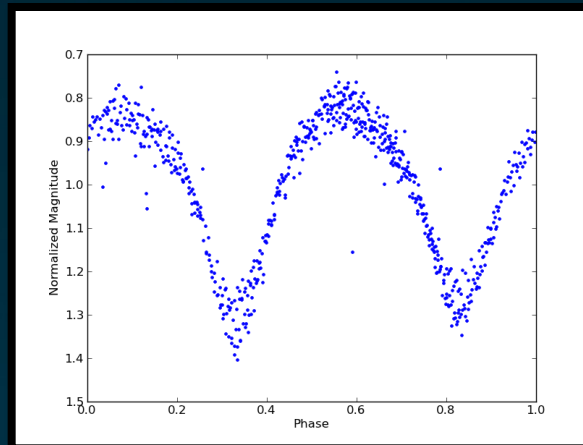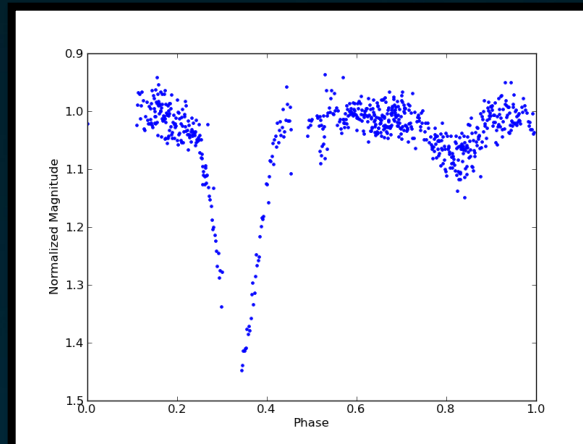

Figure 3. Variable stars
a)UZNO A2.0 1200-00070522
b)UZNO A2.0 1200-00021913