

Observing schedule for the transits in the binary system AV CMi

July 23, 2014

1 Observational goal

We want to investigate, under what circumstances the transit of the possible third body is observable during a time of primary and secondary minimum. For this purpose, we calculated exactly when a transit of the third body occurs within a ± 60 min time difference from the binary minimum. The total number of critical observations during the minima, are 6 (3 for the primary and 3 for the secondary respectively). In order to accurately derive the transit signal from the observed lightcurves (if one exists), we must have some calibration observations. In other words we must have the complete lightcurves of the system during a primary and a secondary minimum. This is why the minimum number of observations required (for a perfect lightcurve sample) is 4. In the next tables we present an analytical programm for the desired observations. For all of the proposed observations we dont need the use of a specific filter (we already expect a high S/N).

Table 1: Observational table, for the most important dates

date	observation start (UT)	observation end (UT)	phase	priority
2014/11/23	23:44:11	04:00:00	primary+transit	high
2015/1/3	23:00:00	04:00:00	primary+transit	very high
2015/2/13	23:00:00	04:00:00	primary+transit	very high
2014/11/24	23:13:00	04:00:00	secondary+transit	very high
2015/1/11	19:12:00	00:00:00	secondary+transit	very high
2015/2/21	19:40:00	00:00:00	secondary+transit	high

Table 1 contains the most important of our desired observations, while from the next Table 2, we need at least one observation for a primary minimum and one for the secondary. If all of them are performed, the search for a strange transit event would be easier and more productive.

Table 2: Observational table, for the calibration observations

date	observation start (UT)	observation end (UT)	phase
2014/11/8	00:01:00	06:00:00	primary
2015/1/13	01:00:00	04:00:00	primary
2015/3/1	21:30:00	03:00:00	primary
2014/12/4	00:50:00	06:50:00	secondary
2015/1/20	19:50:00	01:10:00	secondary
2015/3/2	20:50:00	02:00:00	secondary

2 Target field of view

We present the field of view for AV CMi ($\alpha = 07 : 09 : 10.84$, $\delta = +12 : 11 : 19.1$, $m \sim 11.8$ mag)

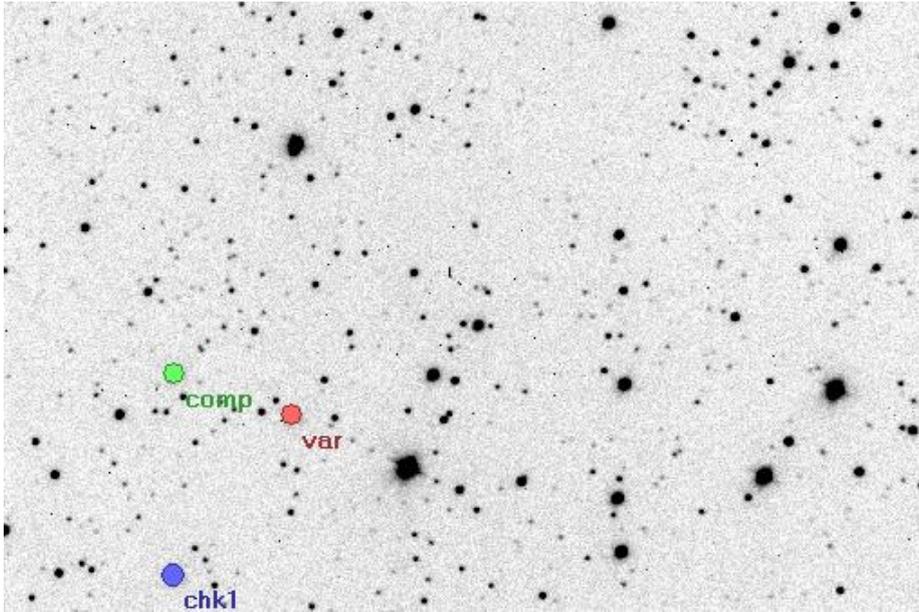


Figure 1: AV CMi is the red dot, while the green dot is a comparison star of the same spectral type (ignore the blue dot)