

Dear CBAers,

Long past time for an update. A tough month, November 2014.

0. I'll start with some stars which should have their seasons ended (IMHO), That would be: DQ Her, FY Per, IM Eri, V592 Cas, Mister JV (ASAS-SNjv). For various reasons: not well placed, periods already clearly revealed by recent data, failure to perform, faded, etc. Time rolls on.

1. **T Pyx** is back now, reasonably placed in the morning sky. When we left our hero, it had suffered its eruption (of course), and exhibited a sudden period increase of 0.01%. That's a huge period increase in a star that erupts every 30 years - and suggests that the star may only last another million years or so. If true, that might suggest why there's only one T Pyx in the sky - because it represents the short-lived phase of "unstable" mass transfer by which CVs end their lives. Not with a whimper and not quite a bang either, but sort of a million-year upchuck. We wrote it up for the South Africa nova conference.

But another possibility is that such period increases represent a strange and transient effect following a nova outburst - in which case T Pyx would then restore its pre-existing orbital period. So: an evolutionary effect, or just a transient effect arising from some unknown physical process in the nova outburst? Sometimes one hypothesis can be favored over another, on "philosophical" grounds (Ockham's Razor). But in this case, T Pyx is *unique* on both hypotheses.

The way to find out is to keep observing this star. Will the period continue to increase, at the rate seen in quiescence (doubling in a million years), or will it stabilize or decline? We can find out. The waveform is of low amplitude but very stable, and will yield a fine Pdot if we're vigilant. Arto, as usual, has started the season excellently; let's keep it going.

2. **HZ Pup** (Nova Puppis 1963). This was discovered in antiquity by Abbott and Shafter as an IP, but they never wrote a paper about it. Often that means the discoverers lost faith in the result... so there has been no follow-up. But we observed it last year and found exactly what Abbott and Shafter did. So we should do a full campaign on it in January +/- 1 month, when it transits around local midnight. Now would be a good start. About 17th mag.

3. Nova Mon 2012 = **V959 Mon**. We have an ongoing project to understand the orbital light curves of novae in decline. The star showed a "heating" light curve, similar to T Pyx. Let's do it again, and see if we can measure the decline (?) in the heating.

4. Speaking of heating, **WX Ari** is showing a beautiful large-amplitude orbital hump during its present low state. If that is due to the heating of the secondary, it could be a bolometer for the WD itself, which presumably shines on the secondary. It's 18.3, but Enrique's data shows that the hump is 0.7 mag in amplitude. Could give you some very pretty light curves, and could shed much light on the heating issue (since in the low state, the binary could be a simple hot-WD-plus-secondary structure).

5. **ASAS-SN14ei**. The beat goes on. The coverage now exceeds 100 d, and is top quality (Berto, Gordon, Bob Rea, Peter Nelson - some of the usual southern stalwarts). As long as

it's pulsing and echo-outbursting, let's keep the faith.

6. **FS Aur, RX0524+42 ("Paloma"), BY Cam.** We have long-term campaigns on these stars. They're all mysterious. The first two, completely so – unlike any other CV in the sky. It's hard to know how frequently we should observe them – but they're all in season, so now's the time to get the *long* light curves that give us the most information.

7. **V1101 Aql.** Way out of season, but I just can't give up. Next minimum expected around JD 57000. They've been getting progressively fainter - now around 16.6, whereas the maxima have been pretty constant at 14.0. A dying superhump? I promise to stop asking, after the next minimum.

8. A goodly number of DQ Hers are now back in the sky, asking for spot coverage: **V418 Gem***, **V647 Aur, WX Pyx, HT Cam, MU Cam, V667 Pup, PQ Gem.** V filter needed for the last one; others are fine unfiltered. Lots of rewards, and you can “play the field” (no unreasonable devotion to any one star needed). For most other stars, the usual CBA approach – a lot of close attention to one or just a few stars – is the most productive.

Happy observing!

Joe

*Most of the power in V418 Gem is at 240 seconds, so you must observe pretty fast. You might be disinclined to do so, since it's 17th mag, but try it! - the amplitude is very high.