

April 19, 2015.

Dear CBAers,

Time for spring cleaning, even in the sky.

1. The EI UMa and V842 Cen campaigns should end. The frequency content of these stars is complicated, and we need to study them closely to see what more is required.
2. UX UMa, on the other hand, is startlingly simple. And startling all around, because I had no expectation we would learn anything new from this star which has been thoroughly studied for 65 years. An obvious 3.7 day period, the signature of accretion-disk precession... and with corresponding sidebands of the orbital frequency (i.e. "superhumps", both positive and negative). All unsuspected in the many previous studies. We want to keep going at least **through the end of April**. Remember to keep faith with the comp star you've been using. And also with the filter (none, or V). Most people have been observing unfiltered, which is fine; but if you use V, could you also supply a calibration, i.e. not leave it strictly differential? Just one calibrated V magnitude per night would be fine.
3. V1084 Her. Enrique will advise on this one.
4. T Pyx. 2.5 months ago, I said "T Pyx, finis". Yes, we know the  $\Delta P$  during the outburst (about 1 part in  $10^{**4}$ ). However, the inference to  $\Delta M$  (the Holy Grail) depends on the assumption that the binary orbit remains circular. That has always been assumed... but what if it's wrong? To evaluate this, we need to see if the  $\Delta P$  is decaying (as the orbit re-circularizes). That's harder to squeeze out of the data, and really demands that we have some solid end-of-season timings. Probably about **10 nightly time series** would do the trick. *Then* finis.
5. HZ Pup. Another attempt to squeeze the last life left in the observing season. It's been 60 days since our last observation, and **a few nights now** would at least double the accuracy of the period. We need it for extrapolating back to 2014, which would establish the cycle count beyond doubt. For these cycle-count programs, you can slightly relax the 2-airmass (30 degree altitude) rule – but don't go crazy.
6. IM Nor, a precious short-period recurrent nova (in theory a contradiction in terms, because short- $P_{orb}$  stars should take a million years to accrete the H needed for a nova outburst). It's 17.5 and the field is crowded; but we'd love to keep after that 2.5 hour periodicity. Is it another T Pyx, or not?
7. IGR 1654-19, V1223 Sgr, V4743 Sgr. All southern DQ Hers, all needing a few timings to keep the cycle count alive

8. V418 Ser and MT Com. These important stars are highly neglected because they're (usually) so faint. Can you measure magnitudes to 19-20? You don't necessarily need a time series (though it could be nice), but it would be good to know how bright they are (roughly). YY Sex too; it's in its first-ever low state (~19), and it would be nice to know something about it now. And V728 Sco, an old nova now known to be a deep 3.3 hour eclipser. It seems to vary between 17 and 18. Not much is known about it, but anything we can learn about a 150-yearold nova would be great!

9. V406 Vir = SDSS1238-03. I've not had much luck calling for this one in past years. People don't seem to like equatorial stars, I guess because you can't get long runs. Which is understandable, because this short-period star is remarkable for the *long* period – of completely unknown nature – present in the light curve (~8 hours). If anyone feels motivated to adopt this one as their go-to star, then I'll talk it up in the next message.

Summer's coming, finally the time to write. Several papers are coming together now: definitely covering UX UMa, T Pyx, VZ Scl, BZ Cam, V1494 Aql, V418 Ser, V1101 Aql, CSS1122-11, DW UMa, HZ Pup, AM CVn. Some individual, some in a family ("novalikes"). I need info for author lists, and also for observing logs. The latter will typically contain name/telescope aperture/observatory name... like Koff/0.35 m / CBA-Colorado (or Antelope Hills Observatory). For the author lists, provide email, postal address, and exact name I should use. It's helpful to use one consistent name in publications: Isaac Newton, I. Newton, or whatever. Journals try for a consistent style, so things don't always appear as you intend – but usually they do. Anyway, send this *current* info if you have observed these stars. You don't need to tabulate the actual time series you sent; I have that.

And you might want to do the timing analysis yourself, with **Peranso** or some period-analysis programs you like. If you submitted data on a star, you're entitled to it (i.e. all the other data too), and I'll send the merged time series, if I have one, to make it easy. I'd like to encourage you to give a presentation at a meeting, or write a short paper (maybe for JAAVSO or JBAA). David Boyd and Jeremy Shears have been doing this for some time. It's scientifically responsible, and you'd be amazed at how much you learn after you're forced to ask the question, what does this evidence show? The DQ Hers and eclipsing stars are obvious candidates; simple O-C diagrams to evaluate for period changes are straightforward, useful, and not difficult to interpret.

I'm on the AAVSO Council now, which means I have to attend their spring and fall meetings. It would be great to see other CBAers there, and even better to see our data presented. (Starting with the Indiana meeting in June.)

joe p

P.S. Sorry that dwarf novae don't get any love in this message. Some of you are doing pretty well by them in the sky, though. I'll get around to them eventually. Feel

free to organize your own campaign, with cba-chat and cba-news.