Sep 28, 2014.

Dear CBAers,

Two very long campaigns continue to produce great results:

1. ***V1101 Aql***. Now in its 75th day, with only 2 days missing, and most days multi-longitude (Europe + USA). Very, very powerful negative superhump, and very regular dwarf-nova outbursts (about every 16 days). Tomas Gomez and Joe Ulowetz are still the main perpetrators, but there's a lot of help. It has convinced me that the Z Cam stars hold deep secrets! My notes call for "quit after the next rise to maximum" - which just occurred. And there are some very tempting targets still reasonably placed in the evening sky. So my advice is: quit the long time series, but *snapshot* magnitudes will be very useful for the next 2 months (at least). That means V or "CV" magnitudes, not merely differential magnitudes. The idea is to watch the 16-day clock change; it changes - but why?

2. ***ASASSN-14ei***. 60 days and counting, and the light curves are still beautiful. The star is a ~43 minuite binary, and probably should be considered an AM CVn star (helium-dominated CV) until evidence proves otherwise. Like our old friends CR Boo and V803 Cen, it seems to have a big outburst and then numerous smaller/briefer outbursts, the latter sometimes lasting only ~1 day. Spectacular, lengthy coverage from Gordon Myers in Australia, plus Josch's every-night coverage from Chile, and many early-ish nights from Berto in South Africa. All the southern hemisphere's major landmasses chipping in (plus one smaller one: Bob Rea has now joined the party from NZ).

Mister 14ei is now announcing itself to the world for the very first time. It seems only fair, and responsible, to keep watching it for as long as the star remains visible to our little scopes. Quien sabe when the next opportunity comes? Maybe never. Keep up the great work!

And now for some others.

3. ***ASASSN-14gx***. Another newly-discovered dwarf nova, which flashed an 8-magnitude eruption – pretty much the theoretical limit for a true dwarf-nova outburst. That means the star is super-faint in quiescence – hardly hardly more than a bare white dwarf. That makes it a WZ Sge star, and it has flashed some nice superhumps, as such stars always do. If we knew its *orbital* period, then we could calulate its mass ratio, the most important physics number we can get from these stars. It appears that the early coverage, thanks to CBA and the ASSASSINs, does reveal that period. However, we should continue for about another week, in case of echo outbursts or other surprises. Expires October 1!

4. ***J0107+48***. A newly-discovered SW Sex star, and a deep eclipser. Now virtually our favorite class of CV, and lots of good coverage on this guy from Enrique and Jim

Jones. To my surprise, the star showed only an orbital signal. It had its chance. Time to quit for 2014.

5. ***QR And***. A minor celebrity, sometimes lauded – though quite incorrectly – as “the only supersoft binary in our Galaxy". It has a 16-hour double-humped orbital light curve, and our campaign, led by Joe U, shows that the orbital period is rapidly changing. Success! This is a signature of the very high mass transfer rate that powers supersoft binaries. It's the number we wanted, and therefore it's time to quit.

6. **RX And**. Jumpin' jehosaphats! A year or so ago, motivated by our discoveries re BK Lyn, I started fiddling with the hypothesis that Z Cam stars could show negative superhumps. Theory says no, but theory is... well, just SOOOO 2011. RX And seemed like a good first test case, and we – almost entirely Bob Koff – now have one full cycle of quiescence-to-outburst data. It looks highly probable that RX And has joined the club. Now we need to work hard to evaluate this for sure. The signal is much stronger at quiescence, which the star has just reached (V=14.3). We ***urgently*** need European coverage, but really need intensive effort from everywhere when the star is quiescent (probably for just 1-2 more days). Also, it would be very helpful to use a V filter on this one, because for the very long period (4.8 hr), we need ***long*** time series – bringing our old nemesis, differential extinction, into play.

7. **V378 Peg** and **PX And**. Having retired QR And and V1101 Aql, which have been monopolizing the evening sky, I'd like to start up on V378 Peg and PX And (actually, Enrique has already started on PX And). Both are negative superhumpers with the "nodal" signal also present. We'd like to see if those signals are actually (perfectly) stable; that would be a major surprise... but the world is full of surprises.

8. **CC Scl** and **BW Scl**. The southern objects of choice in the evening sky, in my opinion. I'm not sure if CC Scl is still accessible (because of faintness), but our earlier work this year has certainly established it as a "hot object". In the morning sky, ASASSN-14ei for sure, and IM Eri (to start the year's campaign).

9. ***DQ Her stars***. Most of these stars especially reward lengthy observation (definitely >3 hrs). But we have ongoing programs to study the pulses of DQ Her stars, and plenty of them are up there needing attention and asking only for ~2 hr runs. These are V1033 Cas, V2069 Cyg, V2306 Cyg, V1223 Sgr, AO Psc, FO Aqr, and V515 And (the last might need something longer). Oh, and **CC Scl**. Although CC is mentioned above as a prime southern target, it's somewhat acccessible from moderately low northern latitudes, and that would really help us parse its period structure – through the increased baseline in terrestrial longitude.

joe