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Newsletter #147 November 25th 2020

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News from the front: engineering reports (Richard Dekany)

Intermittent ZTF shutter faults have recently resulted in reduced operational efficiency and are subject to an active engineering investigation.

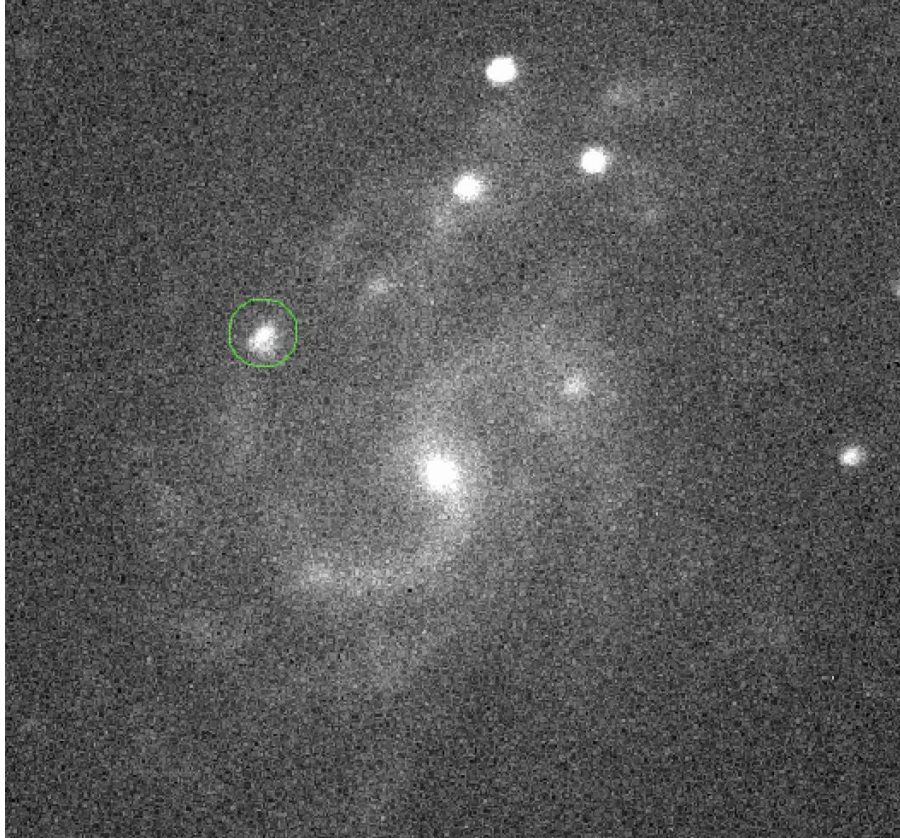
News from working groups

Galactic and M31 Science:

“Last week, we had a few observing nights with Chimera@P200. We observed white dwarfs by their very sharp ingress and egress features and asymmetric lightcurves, which confirms that these objects have very hot, but small accretion hotspots (likely due to magnetic fields). We also continued our study of double white dwarfs, confirming new systems and continue to precisely time eclipses to measure period decay. We are also exploiting the ML classification of all objects; e.g. we are looking into a sample of large amplitude variables and we are finding a significant sample of outbursting CVs which were missed by the Growth Marshall filter. Finally, we are getting ready for the Gaia eDR3 release and the ZTF DR4 release which will be out in a few weeks.”

Solar System:

“During morning twilight on 2020 November 24, Richard Walters successfully made follow-up observations of the inner-Venus asteroid 2020 AV2 using the P60 (see discovery image gif below). The asteroid was seen moving towards the south-east at $\sim 2''/\text{min}$ near a spiral galaxy. The astrometry from the follow-up images extends the orbital arc of 2020 AV2 to 325 days from the initial discovery observations made with the ZTF survey on 2020 January 4 confirming the inner-Venus aphelion of 0.65 au and 151.19-day orbital period, possibly the shortest known. The refined orbit from these observations will enable us to study the long-term orbital evolution of 2020 AV2 enhancing our understanding of its origin and fate.”



AGNs and TDEs:

"Dr. Marat Gilfanov informed us of an SRG transient detected in the on-going eROSITA sky survey. Our Keck/LRIS spectrum obtained on Nov 20 shows host galaxy lines at $z = 0.094$, as well as broad H α and Helium features reminiscent of the H+He TDE class (van Velzen et al. 2020). We have triggered Swift on it. This makes this transient the first X-ray selected TDE with optical photometry, and also the first with an optical spectrum that looks like other optically-selected TDE. We expect the collaboration between SRG and ZTF to yield a sample of similar sources."

Cosmology with SNe Ia:

"Quick update from the SWG, we submitted a JWST proposal for NIRCam imaging and slit spectroscopy with NIRSpec to get time-delays for a strongly lensed SN from ZTF2."

Machine Learning:

"There are two new ZTF Zooniverse projects either launched or about to be: Stellar Sleuths to help classify stars, and Chemical Factory, to help classify spectra. At the Thursday ML meetings we continue to have short talk on various topics. After the Thanksgiving break this week, next week we will have a presentation from Mike Kuhn on a catalog of YSOs. If you are not on the ML list and would like to, get in touch with Ashish Mahabal <aam@astro.caltech.edu>"

Physics of supernovae and relativistic explosions:

“The theme of our last telecon was SLSNe. Steve gave an update on ZTF18acenqto, one of the slowest-evolving SLSNe observed to date (rise time >100 days). The very slow evolution is also reflected in the spectra. Even 560 days after maximum light, ZTF18acenqto is still not fully nebular. Thanks to U-band spectroscopy, his team found evidence for a fast-moving circumstellar shell (similar to iPTF16eh). These properties suggest the explosion of a very massive star, pointing towards a pulsational pair-instability supernova or, even more extreme, a pair-instability supernova. Inspired by the detection of CSM shells around iPTF16eh and ZTF18acenqto, Ragnhild was awarded time at VLT X-shooter to look for CSM shells around 5 SLSNe. She presented the first results of her program. She has observed three SLSNe; one of them shows evidence for a CSM shell.”

Reminders:

- PublicAlerts: There is a [link](#) to the alerts archive on the [website](#)!
- Please help us keep track of all the available softwares! A preliminary list is available on the [twiki](#). Let us know if you are building a software which you think could benefit (or be relevant to) a large portion of the collaboration.
- **ZTF general slack channel**: Please join through this [link](#)!
- If you want to get access to the **ZTF data** via the IRSA interface, please request data access to the communication coordinators: ztf.communication.coordinators@gmail.com
- **Archive GUI** now ready! The interactive image search, filtering and visualization tool is now ready ().
- The **ZTF Twitter account** is now active! <https://twitter.com/ztfsurvey> Re-tweet @ztfsurvey!
- To use the **url shortener**(e.g. during telecons, talks, in emails), navigate to <http://zwicky.tf/shorten> (username: ztf password:16chips) and type in the URL you want shortened.
- The **Wiki page** is active! Check it out at <http://zwicky.tf/wiki>. To request access, please email us at ZTF.communication.coordinators@gmail.com

“I love deadlines. I like the whooshing sound they make as they fly by.”

- Douglas Adams

Have a good and productive week!

Erik and Igor