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Newsletter #118, March 4th 2020

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The Spring 2020 ZTF collaboration meeting (Jakob, Anna and Marek):

The [spring 2020 collaboration meeting](#) is still scheduled to take place March 23-25 in Berlin, followed by the [real-time multi-messenger workshop](#) on March 26-27. It is clear a significant fraction of the partnership will be joining through remote connection. The schedule will be (re)arranged to make remote participation as efficient as possible. We hope that as many as possible can still join us in Berlin.

News from the front: ZTF i-band Filter Update (David Hale for Michael Porter, Michael Feeney, Nick Ganciu, James Brugger and Reed Riddle)

On February 17, 2020 the ZTF Filter Exchanger experienced a fault from which it could not recover without human intervention. The nature of the fault was that when the arm was commanded to move, the arm controller failed to respond to the move (and subsequent) commands. After the failure, the Robotic Operating System responded by restarting the filter system but upon each restart the failure of the arm to respond to move commands continued, until the system was shut down for the night, requesting human intervention.

Daytime efforts the following morning were unable to solve the problem but since the failed move commands appeared to be limited to one of three slots only, that slot (corresponding to ZTF_I filter) was taken out of service so that observing could continue with R and G filters. Upon inspection (Feb 24) by COO engineers, it was found that there was mechanical wear on alignment pins and mating guide holes, and that the 3D-printed industrial-grade plastic filter frame for ZTF_I was cracked. The cracked filter frame was replaced with a spare. The ZTF_I filter was put back into service on February 24 and has been operating nominally since.

Investigation of the cracked frame at Caltech indicated no evidence of impact (consistent with the absence of torque/force limit errors in the operational logs), and current suspicion is that thermally cycling of the unannealed original frame compounded internal material stresses, leading to fracture. The replacement ZTF_I frame was annealed during production, as were the ZTF_R and ZTF_G frames, and is believed to be of superior and consistent quality. Use of a slow cool-down process is known to help layer adhesion and minimize warping in fused deposition modeling (FDM) printing.

News from working groups

Galactic and M31 Science: “The Galactic Plane is currently not visible, so most of us are focusing on analyzing current ZTF data and writing papers (e.g. an overview paper of the first year of deepdrilling/high cadence observations). We are making progress on a full characterization and classification of variable sources. We are also getting ready for next summers Galactic Plane observing season.”

AGNs and TDEs: “We are busy with multiple HST proposals as well as keeping up with currently active TDEs. For example, one of our recent TDEs from this year is now detected in X-ray by Swift/XRT (ZTF19acspeuw, aka Tormund).”

Machine Learning: “The work on ZTF variability continues. Dima has recently started looking at images of comets within ZTF starting to build a deep learning model to find new ones automatically. We have also received monitoring data (from Richard) for P18 which we plan to use to improve the focusing model for P48. If you have ideas you would like the ML team to implement, please get in touch with us at aam@astro.caltech.edu”

Multimessenger: “Two particularly well localized BBH merger candidates (S200225q and S200224ca) were found in gravitational waves. Follow-up was carried out with ZTF for S200224ca for Matthew Graham’s AGN flares program.”

Physics of supernovae and relativistic explosions: “Yuhan gave an overview on the fast-evolving sub-luminous transient ZTF18abfcmjw. Shri informed us about his recent investigation on the transient classification bottleneck with current surveys and LSST.”

The papers corner:

Please keep us updated about your submitted/published papers, they will be advertised here.

Please send Joy Painter, the Astronomy Librarian at Caltech, links to papers as soon as they are published. They will be kept track of [here](#).

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

"It's not that I'm so smart, it's just that I stay with problems longer"

Albert Einstein

Have a great and productive week!

Igor and Erik