Meeting Minutes for Galactic/M31 Working Group

The Meeting Schedule can be found here: ZTF Galactic-M31 Meeting Schedule

Aug 29, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Paula: There is an NPS astronomer in residence program at the Grand Canyon. Paula applied to do it for next year. Ashley Pagnotta from College of Charleston is doing it this year.
- New working group co-lead ideas:
    - Could Tony do it?
    - Should we ask Shri if he has any recommendations?
    - Mike Rich could also do it, but would prefer someone at Caltech to have the position
    - Kareem would be a good option
    - Lynne would be a good option
    - We should first reach out to Mansi and let her know what our current situation is.
    - Maybe Sam Whitebook would be a good option down the line.
    - Does Kareem have any incoming postdocs?
- Mike: Observing on Shane this weekend Saturday and Sunday, let him know about any targets
- Andrew:
    - SEDM still having issues in the science observations (CCD thermal ghost)
    - ZTF has been running fairly smoothly after the last thermal flush
    - Some people are reporting fewer alerts, not obvious why that would be though based on data processing.
    - Ingestion and processing time seem to be improving
- Jan:
    - Paper on wind accreting post-common envelope binaries has been submitted to A&A
    - Has been working on a paper focused on weird white dwarfs with negative alerts that appear to be good candidates for transiting planetary debris

Aug 21, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Still trying to diagnose ghosts in the P60 camera. The new ghost is much less problematic (100-200 counts elevated in ghost region compared to 5000-6000 in the original ghost). Resetting the camera doesn't seem to work for this feature.

- There is some talk about what is going to happen to SEDMv2. Shri + others are actively looking for a new home for the instrument, could possibly even end up on P60, but sounds like Kitt Peak is done.
- Reed: Thermal cycle happened over the weekend, cool down went smoothly.
- Tracy: Working on DR22 prep, on track for September release.

Aug 15, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Paula: Has some nights in September, would like to do some follow-up of interesting objects from the experiment.
- Mike: Also has some Lick nights coming up at the end of August on KAST to do some follow-up of interesting objects from the experiment.
- Paula: Pulsations in CVs paper is now published.
- Mike: Working on the paper with Chester and Jan

Aug 14, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- The NSF AAG proposal (synergy with Rubin-LSST) was fully funded, plus extra! This will allow ZTF to run with full operations for another two years!
- Josiah: Still some concern regarding the cooling system given that we are still rising in average outside temperature this time of year. Also trying to diagnose the continuing ghost issues on the Andor camera of the P60 SEDM.
- Avery: IRSA has not been running some sort of optimization script since around June 19th, which coincides with when we started to see some of the slow downs concerning processing ad ingestion. This script will
- Avery: Current bad pixel masks are created using the calibration files, and the bad pixels in question are probably to subtle in terms of counts to trigger the creation of a mask. This need to be brought up with Roger.
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Aug 7, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: There was a thermal runaway last Wednesday after the absorbers were exchanged, though one was not related to the other, this was simply because a pump was not turned on.
- Josiah: The camera 1 daemon has been a bit problematic recently.
- Josiah: A new ghost has shown up in the P60 camera, will try cycling the camera to see if that fixes it like the other problem.

- Tracy: Finished source matching for DR22 and generating parquet files. Notified IRSA that ingestion can commence.
- Tracy: An update of the bad pixel masks is definitely needed, has not been done since 2020 by Frank Masci.

Aug 1, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- ZTF was offline last night because they forgot to start pumping down the instrument, so we'll have to wait and see how the absorber replacement went.
- Mike: Observing on the 8th and 9th August, please send targets if you need any Lick KAST spectra.
- Tony: Sent out a draft of a paper on CVs in eROSITA, asking for comments from the group.

Jul 31, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: One TCS fault last Thursday. Cryostat absorbers are also being replaced today. Also a small fire to the east (Nixon fire) that caused a delay at the start of last night from smoke.
- Reed: ROS working fine.
- Tracy: DR22 is scheduled for September 22. They have also copied all Zubercal data over to IRSA, currently working on polishing up the documentation. Once that's ready, the Zubercal light curves will be available through the IRSA website.
- Avery: Still looking into the alert latency issue, have identified at least one process that is taking longer now than it used to due to the increased amount of data now available.

Jul 24, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: P48 mostly smooth operating, some cryostat warnings nothing to warrant a thermal cycle. Ideally the absorbers will soon be replaced.
- Avery: Still not clear why the IPAC processing has slowed down. Matthew wants to know whether
- Theo: Fixed a bad bug in Fritz where the wrong observing run was being deleted when people tried to delete runs.

Jul 18, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Ilaria: Working on a project with a student to identify variability in all known magnetic WDs.

Jul 17, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah on P48: Network issues still ongoing at Palomar, data transfers are low speed. Also still seeing a fair amount of warm temperatures in the camera system, sometimes close to the thermal runaway limit.
- Josiah on P60: Still trying to correspond with Andor on the SEDM camera issues, though the thermal issue has not resurfaced in a while.
- Avery: Started DR22 processing last week and running source matching, schedule for release in September. IN2P3 has started to test the data downlink speeds from IRSA/IPAC, they are planning to store all raw ZTF data there.
- Andrew: Working on Zuberforce calibration, which is challenging given the inhomogeneity of the source catalogs.

Jul 3, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Reed: On Sunday morning, the instrument stayed warm after observing, almost had a thermal runaway. Decided to thermal cycle the instrument. Thermal cycle went really well (cooled back down very fast) and system got cool enough before start of Tuesday night so decided to observe. Observing went well last night..
- Reed: Rough determination of cryostat problem is either some contamination in the southwest cryo head, or just buildup of ice in the coolant lines.
- Tracy: Last night's processing proceeded normally using Saturday's calibrations. Submitted proposal to AAS to put a large volume of ZTF data into AAS database where it would be hosted for 2 years with possible renewal. IPAC is mandated to host ZTF data for 3 years post survey completion, so it's a bit redundant, given that data ould be transferred to AAS at the end of the year if proposal successful.
- Andrew: Starting to perform ZUBERFORCE processing of all Pan-STARRS1 sources, complemented by ZTF deep reference catalogs, and Tycho to handle contaminants in ZTF refcats near bright sources.

Jun 26, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: 2 days into stockholm conference, the SEDM ghost issue reappeared. Performed some long resets and that seems to fix it temporarily, though it keeps showing up intermittently. Sending camera back to Andor for repairs could take 4-6 weeks, so

waiting to get some kind of backup camera (sedmv2?) so SEDM isnt down for that full length of time.
- Theo: Working on some improvements fritz API improvements that make accessing data, especially light curves, 2-3 times faster.

Jun 20, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Andrew: No major ZTF issues, but processing is still very slow, this has been an ongoing issue at IPAC and no one really knows what the cause is yet. Otherwise ZTF is observing normally.
- SEDM appears to be working, TEC problem has been resolved.
- SEDMv2, no updates, still at a standstill
- Andrew: Disappointed in the lack of communication from the LOC/SOC regarding the lack of virtual options. Only online talk was a session/talk on kilonovae.
- Experiment: PNeed to decide on dates pretty soon, start looking at the weather forecasts and choose dates as soon as a good 3-night window appears
- Announcing the experiment: AstroNote (not ATel!), maybe send a notice to AAVSO. VSnet might be an option, but not currently working. Getting in a RNAAS soon might also be a good way to reach more stellar people.
- Eric: David Wang reported a highly extinct nova candidate in an ATel.

Jun 6, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- One experiment is currently running.
- Sam: How can one get ZTF photometry of high proper motion sources? Andrew says all the photometry is available, but for high proper motion sources some of it won't be matched with
- Jan: Paula has been pushing Jan to publish a list of the ZTF discovered dwarf novae (being saved on Fritz with a filter). Is now trying to do this more systematically by querying the Kowalski database and has found a lot more objects. Filter requires objects to be atleast 1 mag brighter in two detections atleast 1 hour apart.
- Jan: Has also been working with the Zubercal data to search for shallow eclipses (either WD+ELM WD binaries or planets around M-dwarfs). Seems possible! Andrew has also been wanting to do the planet search side of things as well.
- Mike: Observing tonight at Lick on the Shane Kast spectrograph.
- Sam: Has some objects that might need some classification from Lick
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Jun 5, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Reed: ZTF/Palomar had some networking issues last night, data was acquired but not transferred to IPAC.
- Avery: Will be difficult to catch up with processing the data that wasn't transferred due to other issues going on.
- Tracy: Data processing seems to have some latency issues recently. Launching of real-time jobs seems to be much slower (x10) than usual. Looking into networking issues that IPAC is itself experiencing.
- Josiah: Andor camera has been functioning properly since Monday of last week. Best guess is there was an issue with the thermoelectric cooler, which Andor suspects was generating some light (LEDs?) when it faults. Possible that the camera being off for two nights during the AY101 class visit was the fix.
- Andrew: Finishing up documentation for Zubercal. Looks like ZTF was observing clouds for about 1 hour? For the CPB calibration, it doesn't seem like ZTF will be able to point low enough to reach high point. They are now considering a light source inside the dome.

May 29, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Thermal cycle completed, went okay and no cryostat warnings since then. Roger also swapped out some CCD control boards and CCDs 3 and 4 seem to no longer be problematic.
- Matthew: Next experiment planned for June 3rd
- Reed: ROS operating smoothly.
- Josiah: Contacted Andor last Thursday about the SEDM camera issues. They agree that it appears likely to be a thermal (dark current) issue. Completely warmed up the camera and let it idle for a bit. Upon re-cooling, the artifact had disappeared, but then reappeared during the night. Instrument than came off the telescope for a couple days for the AY-class observing. After being put back on the telescope, the feature has once again disappeared, not sure why, but keeping a close eye on it.
- Reed: Had an update meeting the Kitt Peak about SEDMv2. Mirror is still ~0.5" from its normal position. Needs to be re-seated gently before telescope can be moved back to vertical.
- Andrew: Still working on docs for zubercal and exploring the High-Point calibration experiment.
- Theo: BTS-bot is now submitting TNS.

May 29, 2024 - ZTF SSC Meeting - Wednesday 11:00 AM

- Our experiment is being given priority in July given the time constraints for our fields. We will coordinate with Viraj on the Gattini J-band observations as well.

May 23, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Andrew: CCDs 3, 4, and 6 continue to be problematic, Roger is working on it.
- Team Meeting: With one 30-min time slot, let's split it up in summary and one science talk
- Mike: Would be great to have more talks
- Eric: The fixed S/N observing method gets brought up evry couple of years. At the moment there is not an easy way to pass observing conditions from ROS to the scheduler, so this is unlikely to get implemented in the near term. It has been submitted as an actual ZTF experiment proposal. This would ultimately require a lot of time on Eric's part, which he doesn't really have in the next few months.
- Eric: There are certainly fancy ways to scale the exp time but these take time to implement. Simple ways would be faster but more likely to fail in complex conditions.
- Eric: Pilot self lensing search is still in review (2.5 months!). Connected journal about a response. Cooking up a larger self-lensing search now as well. Otherwise doing all Rubin stuff.
- Andrew: No particular updates, just working on more calibration efforts.
- Lynne: Has an undergrad working on analysis of "square wave" sources with 3-ma peak-to-peak amplitudes. Possible binary system with disk/inclination effects. Found a few, one has already been published by another group. Theory work suggests disk rotation/precession and predicted a feature in the LC of one object which actually showed up! Will show some plots in a future meeting.
- Paula: Tried to get spectra of CVs in the galactic experiment fields, but these objects are quickly setting or unavailable.
- Mike: Trying to make a contribution to the stellar overview paper based on Chester's work. Has some Lick nights coming up in early June, and hoping to expand to larger number of nights on Lick next semester. Able to reach around 20 mag in g-band, but have to use long exposure times, around 1 hour 20 minutes.
- Sam: Thinking about how to analyze variability in field brown dwarfs with ZTF.
- Zach: Working on periodicity analysis projects
- Sam/Andrew/Lynne: How do we identify long period objects?

May 22, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Don: Won't be attending these meetings any more due to other responsibilities. Joasiah will be taking over SEDM updates.
- Josiah: SEDM threw a lot of errors at the end of last week. Seeing a lot of ghosts in the images, but are unable to identify any light sources that would be producing it (internal or external). Problem has now persisted for multiple nights. They have ruled out any light sources now outside the telescope or inside the telescope tube. Even with a black piece of paper placed just over the camera window, the ghost still appears, so either a problem with the camera itself (or a light source inside the camera??). Josiah will be conducting Andor to see if there are any solutions beyond replacing the camera.
- Andrew: Continuing issues with CCDs 3 and 4. IN2P3 wants to test out a system to do fundamental photometric calibration for ZTF by putting a collimated light source on a tower on top of high point. Plans are becoming concrete.
- Ashish: More SCoPE fields have been added to Zenodo.
- Theo: Replacing DR19 with DR21 on Kowalski.
- Ivona: The BTS sonification project has been released.
- Ivona: The ZTF Wikipedia page is in a pretty poor state. Needs some pizazz.

May 9, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Team Meeting Updates:
    - Papers since last meeting
    - Project updates
    - Legacy paper updates
    - ZTF experiment updates
- Andrew is working on a proposal similar to ZEPHR/ZVAR but with focus on NEO data (e.g. CRTS).
- Legacy paper:
    - Still waiting on some input from people, mainly
    - We need to set hard deadline, sometime in AUgust. Tony will send out reminders to people most in need oof adding something.
- Experiment Proposals:
    - Resubmit same proposal, but make sure to emphasize the need for specific time range (June 29 - July 13) to get the densest fields with the best seeing.
    - Update the proposal with some result from the last experiment.
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May 8, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: CCDs 4 and 8 stopped working on one night last week. Mountain staff checked the cabling, didn't see any issues for a couple days, but happened again on Monday. Wanted to switch out the CCD controller but the backup controller didn't have the proper cooling system attached. Next steps are currently unknown.
- Tracy: DR21 data release on track for next wednesday.
- Don: They have been able to get the KP82 telescope upright, mirror has not yet been reseated. Progress is still being made on the dome/dome-drive in the meantime.
- Andrew: A pretty reasonable amount of data is not getting processed because the astrometry solve is failing. SCAMP is failing in the second round when trying to solve the distortion.
- Theo: Working on developing mechanisms to trigger SWIFT from Fritz in prep for Anna Ho's experiment.
- Ivona: Working on a sonification project.
- Ivona: Internal newsletter -

May 1, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Have been testing out a system to login remotely to the guide camera and check on the focus. Focus has been a concern recently.
- Josiah: Have been seeing a pretty steady stream of cryostat errors, around 1-2 per day, might be time to cosider another cryostat flush during next full moon or bad weather window.
- Tracy: There was some issue with pipeline/alert generation during 1-2 nights during the last week. Issue has been fixed, and all missing alerts have been generated and released.
- Don: SEDM P60 barreling along. SEDM KP is a different story. There was recently a team up on the mountain with a couple nights of on-sky operations. While testing, the telescope started slewing north and did not stop! Telescope was actually pointing slightly downward!! Did not stop until the telescope hit a railing, earthquake restraints kept the mirror in place. Problem appears to be related to the TCS system itself. There are no hardwear interlocks (i.e. limit switches), or maybe tthere are and just didn't work or got broken during this event. Telescope has been moved since to a horizontal position, but it will be a few weeks before telescope is usable again, primarily because the mirror needs to be safely placed back intio position.
- Yashvi: Got about 1-week of observations, mostly imaging, prior to the TCS failure. Have seen some issues with guiding, some issues with saving images off the CCD, most data is not useful. Also Cadmium lamp is broken.

- Andrew: CCD 6 continues to be problematic and gets worse as sky gets darker, otherwise calibration is going well.

Apr 25, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Add in section within legacy paper to describe the results of the experiment.
- High-cadence galactic plane survey, i-band galacitc plane survey, subsections for these as well. Triplet observations as well.
- Think about new ideas for experiments.
- Need to submit an SDSS-V project description prior to submittign a research note
- Jan: Sent everyone a paper related to cyclotron WDs discovered in ZTF
- Jan: Now working on publishing a list of dwarf novae
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Apr 24, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Matthew: Small hiccup with the camera last night, not sure what the technical reason was, but otherwise running fine, and have been using up a decent amount of TOO time recently.
- Tracy: DR21 is on schedule, everything ready except for the release notes, planned for May 15th.
- Matthew: Some people are reporting alert thumbnails with different sizes, not 63x63 pixels as they should be. Seems to be related to image CCD edge cases. If truly some are different sizes, they could have ML implications if models are designed to train on fixed 63x63 image sizes.
- Don: There's a group out at SEDM Kitt Peak, potentially doing some real observing. A new weather station has been installed. Mirrors still not recoated (not since 2015).
- Matthew: Wendelstein Observatory is interested in hosting the SEDM(2?) instrument in the future on their 2.1m telescope.
- Andrew: Looking into the high-seeing that has been reported recently.
- Theo and Ashish out today, no updates but Fritz seems to be working well.

Apr 11, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Anna and Brad: June experiment
    - ZTF coverage of ULTRASAT high cadence fields

    - ZTF can cover the ULTRSAT fields with about 5 pointings, will use 60s exposures and cycle through the fields
    - Want to autonomously trigger Swift using Fritz
    - Trying to decide on Swift triggering criteria
    - ULTRASAT high cadence fields will be near the ecliptic poles
    - What galactic variables/transients would be interesting to trigger
    - 5 ZTF fields approx 240 sq. deg
    - Should have SCoPE analysis of all the selected fields (822 - 826)
    - Should consider using different seed catalogs to run the forced photometry
    - Items to get to Anna and Brad:
        - Jan: Numbers related to Fritz filter
        - Zach: Forced photometry pipeline for short-period sources
        - Daniel: Scope Analysis of planned fields
- Jan: Showed spectrum of object with strange, triangular light curve. Appears very hot, showing strong He-II lines, and several non-identified lines. Not sure what this object is, could be a heavily reddened, very hot object? Gaia says 40,000K

Apr 10, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Snow last Thursday and Friday, good weather since then.
- Yu-Jing: Getting fewer exposures than expected for experiment
- Tracy: For experiments, IPAC would prefer to have notification a week in advance about which fields and what filters are being used. They should be included in the communication channels.
- Don: SEDMv2, still waiting on weather to warm up to test out the upgraded system. Hoping to get on sky this month

Apr 3, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Still dealing with some pretty poor weather. Occasional cryostat warnings still happening, nothing concerning but should keep an eye on how often they are occurring. Have had atleast one filter exchanger issue over the past week, but the software was able to handle it fine.
- Reed: Smooth sailing at the moment
- Avery: DR21 has pretty much been handed over to IRSA for ingestion
- Don: They have the dome working for SEDMv2 so they should be back on sky fairly soon. Some of the driver motors don't work well at cold temperatures and it is still cold at Kitt peak, and the weather station on Kitt peak is also not working (it needs to be for robotic operations).
- Don: Still dealing with a misalignement issue for the new optics.

- Andrew:
- Ashish: Brian is leaving next week, and he'll be leading a session on transitioning **April 11th.** SCoPE has now processed a total of 70 fields. Not sure yet who Brian's replacement will be, some grad students will likely be able to handle running the code.
- Theo:
- IN2P3 is leading an effort to produce a series of ANA papers related to DR2 of the ZTF supernova classification (?)
- **Register for ZTF team meeting!**
- Shri:
- Visiting Professor from CU: There will be a DESI call for secondary targets sometime soon (this spring). Might be a good opportunity for joint experiments ZTF + DESI

Mar 28, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:AM

- Ilaria will be back at Caltech next week and then leave for Austria in mid-April to begin her new job May 1
- Ashish: attended a NASA meeting where a new time series model was presented that may have some use for us
- Jan: trying to finish minor tweaks to his magnetic paper and submit; looking at Skymapper data for WDs with no Balmer jump and finding a 17 min period AM CVn along with 2 eclipsing AMCVns (one 19.3 but close so very faint object) and these may increase the space density of AM CVns; will provide some text on AM CVns for Legacy paper. Some discussion about putting the candidate CVs into a Legacy dataset from Ashish and could be hosted at Caltech library. Jan will atttend the Stockholm meeting.
- Eric: put some text into galactic summary paper for Legacy
- Ilaria: found 4 more tow-face WDs with alternating H and He lines
- Paula: finished proofs on magnetic candidates from ZTF so should appear in AJ soon

Mar 20, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Don: Shri met with NOIRLab. They are willing to provide some relief on the tenant fees, but otherwise they don't have much money to help out with repair/resurfacing.
- Andrew: Short presentation on Zuberforce! Zubercal Forced Photometry
- Ashish: Still looking for some datasets to include in ML paper and for AWS po
- Mansi: M1 mirror has now been installed on Rubin. They are considering reweighting the Rubin WFD survey. Rubin is also getting more serious about Neutrino triggers thanks to push by Robert, also considering GPM(?) follow-up.
- LIGO-O4 B will be starting up again soon

Mar 14, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- ZTF team meeting registration link: https://indico.fysik.su.se/event/8595/overview
- Ashish: Thinking about legacy datasets in the ML group. Tracy from IPAC is also wanting to know of any datasets that AWS would like to host/showcase. Pretty vague what AWS wants, but basically just a large dataset that can be made public that the community can interact with.
- Paula: Would the CV dataset (~5000 objects) be good for AWS? Still a lot of work to be done with going through all of these objects and making sure they are real CVs.
- Legacy Paper:
    - What are we missing? We should probably just contact individual people at this point about adding in their stuff since several people have already added.
        - Jan
        - Ilaria
        - Tony
        - Zach
        - Kevin
    - Special surveys section, e.g. Galactic plane deep drilling, galactic plane i-band, experiment deep drilling and SDSS-V overlap. Eric can help with any numbers/stats related to survey.
    - April 15th deadline for submissions
    - Asked lead editor of PASP whether this would be a good target journal, and sounds great!
- Lynne: Could we identify any specific fields that need more coverage, either because they didn't get observed enough or because the processing has failed for those fields for some reason. Lynne and Tony wil identify a few examples and write up a memo to describe potential issues.
- Tom: Working on developing new analysis techniques to apply to our difference image forced photometry light curves.
- Ilaria: Presentitng data on a massive/magnetic white dwarf showing 6.56 minute photometric and spectroscopic variations. Spec variability is a narrow H-alpha emission peak moving by +/- 2000 km/s. Could this be an asynchronous polar? Working on a joint HST+XMM proposal.

Mar 6, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Still a lot of bad weather/clouds, but looking much clearer next week. Cryo has been behaving, but there was a filter exchanger failure trying to put the i-band filter back in place.

- Reed: When filter arm was trying to nudge the i-band back in place, the application running the arm failed and ROS didn't understand the error code. They have been working to address all these issues (better error handling and an updated version of ROS), and on Monday the updated software handled the same error case just fine, so we are back in three-band observations.
- Tracy: They have been thinking about how they could generate references in areas where they don't exist yet. Avery suggested they could relax the "flatness" criteria to achieve this. This might impact the rates/sensitivity, so everyone should be aware of this and sign off on it first. Not very impactful for stellar since we'd just be doing injection/recovery to assess completeness.
- Don: New optics being installed in SDMv2 tomorrow, should know very soon whether the focus has been improved. Close to selecting a vendor for the dome fix. Shri is in Tucson talking with NOIRlab about funding/resurfacing.
- Andrew:
- Ashish: SCOPE-III paper has been accepted and Robert's TDE paper.
- Theo: Fritz can now accept WINTER alerts and push them to TNS.

Mar 1, 2024 - ZTF SSC Meeting - Thursday 9:00 AM

- Experiments:
    - Current and Future:
        - Thomas Ahumada is currently conducting an experiment:
            - Conducting joint observations with DECam
            - Weather has not been great, nothing exciting discovered so far, might not get much out of this experiment.
            - There has been considerable excitement about these types of joint observations between ZTF and other instruments/surveys.
        - Clusters experiment is next:
    - Matthew:
        - Experiments are running under program ID = 1, so alerts are immediately public but images are subject to 60-day embargo.
        -

Feb 29, 2024 - ZTF Galactic/M31 Meeting - Thursday 11:00 AM

- Team Meeting in June: Ilaria and Zach likely to go (Jan will be there too)
- March 24- 28, 2025, there will be another big ZTF meeting in Pasadena.
- May 13-17: Meeting in budapest on star formation and machine learning.
- Rubin-LSST ISSC meeting at Harvard April 15-17, followed by a meeting April 17-19 on anomaly detection.

- May 20-24 Rare Gems conference in Tucson
- European White Dwarf Workshop in Barcelona in July 8-12.
- Nov 23-30th, RR Lyrae + Cepheid Conference, Marrakesh (in person + online)
- Rubin-LSST SLAC meeting in August
- ZTF Experiment:
    - How do we treat the high cadence experiment data in combination with the standard low-cadence ZTF photometry?
    - WHat metrics can we calculate and compare?
        - Periodicity
        - Statistical measures (e.g. IQR, st. dev)
- Science updates:
    - Ilaria: Working on an object with Tim Cunningham, a heavily metal polluted white dwarf with an association with XMM x-ray source.

Feb 28, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: On sky Thursday , Friday, Saturday, and clouds since then. Cooling capacity of southwest cryohead dropped, which usually indicates a blockage, but later seemed to clear itself out.
- Reed: We have enough computers that if one fails he should be able to swap out some parts to get a spare up and running.
- Avery: IPAC downtime expected on March 12th and 19th. Cutoff for DR21 is this Friday, release date is mid-May. 2-month rolling window for image release has been ongoing since the beginning of this year.
- Don: Not much going on with SEDM, smooth operations. SEDMv2: Plan to go out early March (next week) to replace the optics. Getting bids on a complete overhaul of the dome drive system.
- Andrew:
- Ashish: They have been brainstorming a project to look at all the filters people have been using on Fritz, what sources are detected/missed and which ones are ultimately saved. Thursdays at 3PM meetings to
- ISSC Meeting: April, covering Anomaly detection with RUbin-LSST at Harvard.
- Team Meeting: No registration link yet.

Feb 15, 2024 - Galactic/M31 Meeting - Thursday 11:00 AM

- Andrew: Short exposure (2-s and 10-s) are not getting processed, unclear if this is a problem on our end or on IPAC/IRSA's end.
- Nicholas Earley on Gattini J-band high-amplitude variability:

    - Paper recently submitted by one of Mansi's students on ~100 exotic long-period, large-amplitude systems from Gattini J-band
    - ATLAS saturation is around mag 12.5
    - Gattini is about 10" per pixel
- Jan: Paper on new eclipsing AM CVn with summer student has been accepted, would like comments back on Cyclotron paper by end of next week.

Feb 14, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: The i-band filter has been back in the mix for the past couple of nights and so far no issues with the filter exchanger. The filter arm was off by about 100 microns before, so now the robotic arm is programmed to try nudging the arm by small amounts if it fails at first and then trying again.
- Some short (2 and 10-s) exposure are causing problems with processing. These are part of some young supernova follow-up observations.
- Tracy: Completed some IRSA maintenance yesterday, back in operation. IPAC will also have some downtime in mid-March.
- Jacob Jensen will be joining IPAC as staff scientist to work on the Roman Rapid team.
- Don: SEDMv2 - Making a list of all the expenses that we have incurred to help repair/upgrade the telescope so that Shri can make a case the NOIRLab soon that we have been doing our part and they should chip on on some items.
- Don: April 1st tentative date to get UPS and VFD fixed
- Andrew: Cal meeting was cancelled, IN2P# didn't have any updates, but are still working on the pocket effect calibration
- Andrew: Working on proof of concept to speed up forced photometry calculations by constructing image pixel cubes…not exactly sure how this works
- Rubin ISSC having a 3-day workshop at Harvard in April (week after eclipse), followed by an anomaly detection-focused workshop.
-

Feb 7, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: No observations since last Thursday due to weather, snow expected to continue at Palomar through this week, hopefully back on sky Saturday or Sunday night.
- Reed: Filter arm continues to be tested, exchanges with i-band filter seem to be going well, hopefully ready by the time the weather clears to see how it works.
- Tracy: IPAC side running normally, downtime event expected next Tueday morning from 8:00AM to 12:00 PM PT.

- Don: Dan McKenna planning trip to Kitt Peak in two works to work on power supplies and UPS system. Hoping to hear more about NOIRLab's involvement in KP82 maintenance after Shri's visit in March.
- Theo: When uploading spectra, you can now specify the PI of the observing run.
- Ashish:

Feb 1, 2024 - Galactic/M31 Meeting - Thursday 11:00 AM

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Jan 31, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- I-band is still being problematic, sometimes works but sometimes the filter arm still gets stuck moving from i-band to other filters.
- Andrew: IN2P3 has started running the pocket effect correction code, should have some results for next week.
- Ivona: They will be printing the posters on foamboard for us, size A1.
- Matthew: Turbo molecular pump on the cryostat failed on Rubin-LSST camera. This is embedded within the center of the camera and would be very difficult to access and fix, considering adding something to the outside of camera to fix it. Will add significant delay.
- Lin: NGPS spectrograph got shipped yesterday, will arrive at LAX on Feb. 2nd!!

Jan 24, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Thermal cycle went well (started on Sunday night). Pressure gauge was reading erroneously, but seems better now, only being used for monitoring anyways.
- Reed: Dan McKenna is on his way out to Kitt Peak to work on reprogramming the dome controller motors.
- Andrew: Some Zubercal DR20 checks, not much else.
- Theo: DR20 expected to be ready on Kowalski machines on Friday.
- Shri on next week's Watson Lecture:
    - Need to contribute some slides and a poster.
- LSST has recently had a major cryo-cooler failure that requires opening up the camera. This could mean LSST won't start until
- Shri: Nick Law now has 20 million to build the Argus Array. This might actually make seeking funding fro cZTF a bit easier, if we envision it as a joint facility with Argus.

Jan 18, 2024 - Galactic/M31 Meeting - Thursday 11:00 AM

- Not quite settled on exactly what we would want to do for the next experiment (e.g. observe the same field each night or a different field each night, g-band or r-band), but are settles on the following:
    - Only do Galactic plane fields, ideally SCoPE fields, though not necessary
- Ben/Tracy: Tracy is taking over the ZTF science data system at IPAC. Introduced herself this week but not fully taking over yet.
-

Jan 17, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Not much to report, just lots of thin clouds. No shutter issues this winter so far which has been nice but surprising.
- LIGO-O4a ended yesterday, LIGO-O4b starts March 25th. We should do a full thermal cycle during the next full moon (~Jan. 25th).
- Ben: DR20 just went live earlier today. DR21 will be on May 15th.
- Don: SEDMv2 telescope power supply seems to have fried one of the VFDs that controls the dome, so dome is not functional at the moment. Dan McKenna has made progress in programming the new VFDs which appear to have some internal projection against power surges. Facility UPS is still not working.
- Andrew: More comparisons with new star flats. Zubercal DR20 is also coming out today, still copying some files over.
- Theo: Will be releasing some new changes to Fritz front end this week, mainly related to source plotting.
- SURF students?

Jan 10, 2024 - ZTF Ops Meeting - Wednesday 1:00 PM

- Next ZTF Team Meeting: June 10-12 + 2 day workshop on 13-14 on transient science at swedish royal academy of sciences.
- Josiah: Since last meeting ~ month ago, most issues have been porr weather, some filter exchange issues when goes from i-band back to g or r.
- LIGO goes offline end of next week and stays off until March. Aiming to do a full thermal cycle during next full moon around Jan. 25th.
- Reed:
- Ben: DR20 comes out next Wednesday. Processing of all the Galactic experiment data went well, generated <1 million alerts each night.

- Ben is stepping down as data operations lead, replaced by Tracy Tang, happening in the next couple off weeks.
- Don: SEDM-KP: Still no working UPS. Dome alterations have seemingly been successful, no more dome binding thus far, still working on programming the variable dome drivers. New optics being manufactured, should be delivered by end of month, installed sometime February, to remove birefringence issue. Mirror coating supposed to happen first quarter this year, but no official dae has been set.
- Andrew:
- Theo: A bit stress tested by the experiment, difficult to parallelize with everything coming in a single data stream (does that mean same field/filter?).
- Ashish: ZARTH now has more than 1 million classifications.
- Ivona:

Dec 21, 2023 - ZTF SSC Meeting - Thursday 9:00 AM

- ZTF Experiments:
    - Every month in ZTF-O4, spend 3 nights doing an experiment.
    - Time comes from public, partnership, and Caltech time.
    - All data acquired will be considered **public**.
    - Explore cadences that haven't been done before.
    - Considering this as a way to pay forward some time that is getting used for gravitational wave follow-up in future months.
    - Jesper: Should we open this up to the community to provide ideas for 3-night experiments? This might be to chaotic if too many ideas start to get submitted.
- Tomas Ahumada: The Extra-galactic experiment
    - Chose around 100 ZTF fields that are observable for more than 7 hours above airmass=2 furing the three nights.
    - Did g+g+r+g observations per field with 90s exposures, trying to spread out each field's exposures as much aspossible throughout the night.
    - Got a median timespan per field of around 3 hours
    - Generated a few astroNotes from experiment and the community got pretty excited, maybe we should notify community in the future when experiments are planned and their details.
    - Need to also communicate plans better to the partnership, apparently this first experiment was mostly a caltechendeavor.
- Galactic Experiment
    - Need to coordinate with other groups.
        - Finalize field selection with Brian Healy and Michael Coughlin, what are the best SCoPE fields.
        - Notify other members of the collaboration about field selection and cadence so people can prepare any follow-up efforts

Dec 14, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- What has OGLE not yet done that we can do? Their Galacitc plane survey (outside the bulge) has a 1-2 day cadence (sparser after the first 100 epochs are obtained): https://arxiv.org/pdf/1504.05966.pdf.
- Zach: Will take a deeper look into what OGLE and other surveys (VVV) have done in the regions we're observing to make sure we are doing something unique. Will also do a more detailed comparison of field metrics such as stellar density and what sky regions (e.g. constellations) are covered to aid in the final selection of fields.
- Tony: Still need more people to contribute to the overview paper, extending the deadline to some time in February

Dec 7, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Tony: more in favor of deep drilling, but is there a way we can combine these?
- Paula: Motivations for deep drilling, assessment of completeness, comparison with SCoPE.
- Mike: Could we cover the COSMOS field as an extragalctic option?
- 2 in the plane, 1 out of the plane.
- If we pick a slightly southern field that is only observable a fraction of the night, what do we do with the rest of the time? Maybe we use that for SDSS-V following?
- Might be good to use extra time to pick another field SDSS-V plans to observe at the beginning of the night when the chsedule is more predictable.
- Let's just use the r-band
- We just need to figure out what fields and in what order we would like to observe them.
- First night: start with deep-drilling on an in-plane field that SDSS-V plans to observe, or any SDSS_V field but priotizing those with highest stellar density, then move to extended deep drilling of an in-pane field ideally with COSMO coverage.
- Second Night: Pick an out of plane field that will be available all night, priortizing one of the SCoPE fields and hope that SDSS-V is observing within that part of the sky.
- Third Night: Same as first night but with different fields.

Dec 6, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: New cables installed on friday and wiring worked on over the weekend. Back on sky last night (Tuesday). Encountered some cryo pressure warnings but not sure where they came from, compressors were operational. Then had some filter arm issues, got stuck going from i to g.

- Matthew: Engineers are rebalancing the telescope this afternoon? Unclear why.
- Ben: Processing went well with the restart. IPAC Kafka cluster has developed an imbalance, might need to dump all the alerts from IPAC. DR20 source matching is done, parquet generation is running and IRSA ingestion should happen over the holidays.
- Don: Got approval to modify the observatory to fix the rubbing of the dome, which will involve cutting out some non-essential piece of flooring. Had to spend $2000 to get approval to do this (money for consulting firm to come out and confirm that it's necessary and feasible). NOIRlab has mentioned that are getting quotes on mirror resurfacing?
- Andrew: DR20 zubercal source matching is almost done.

Nov 16, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Paula: SEDMv2 reductions still proving difficult, Sarah Hall said flat fielding is an issue.
- Lynne: What is the scope of the overview paper? Just results from the partnership or also from the broader community?
- Lynne: Euclid synergies? Euclid avoids the galactic and ecliptic planes.
- Eric: How far in advance can we figure out what SDSS-V plans to observe?
- Paula: Would be good to talk with Scott Anderson (transient SDSS-V planner).
- Jan: Would like to have i-band coverage of the entire sky. How much are we still missing? Mainly for completeness. ZTF would be the only survey besides Pan-STARRS with i-band variability information.
- **Science Updates:**
    - Jan: New eclipsing AM CVn systems (4) with a summer student. Found these starting with the dwarf novae list.
    - Jan: Working on sample of low accretion rate polars (cyclotron emission systems).
    - Jan: Got some observations this week with INT for a few people.
    - David: Got referee report back on xray binary paper with Eric. Planning to re-submit next Thursday.
    - Lynne: Paper with undergrad working on Monarch2 over the summer using public DR15/16 data. Not many FU Ori events from Fritz filter.
    - Andrew: Zubercal going from DR16 to DR20. Expected release in January. Everything is already calibrated since it's matched to Pan-STARRS1 and not ZTF reference images. Planning to just
    - Eric: Waiting on pub-board sign off on ZT self-lensing binaries paper. Also trying to get UW to incorporate Zubercal into their light curve
    - Paula: Submitted paper to pub-board on magnetic CVs. Observing at APO this week, send any targets.
    - Sam: Working on finding stable pulsators in ZTF.

Nov 15, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- NSF AAG proposal is in for ZTF-Rubin overlap
- Ben: Just passed 1 million science observations!!
- Ben: ALERCE is wanting to know whether they could request forced photometry for around 1.2 million objects.
- Andrew: Working on the next Zubercal release, which will correspond to DR20 (early January).

Nov 1, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- ZTF-Rubin Overlap justifications:
    - A missing year of data would also be quite impactful for missing transient events.
    - Rolling cadence is expected, not sure when it will kick in (immediately or after ~1 year of uniform observations?)
    - Ilaria sent some text with some justifications compiled by the Caltech stellar group around 1 year ago
- Tony: Found a periodic intermediate polar with with clear periodicity in its deep drilling data, that was not detected by Kevin in his periodicity search. Makes a case for getting more deep drilling data in ZTF-O4, for better periodicity detection, to resolve period ambiguities, and to reduce the need for follow-up observations.
- Tony will be creating an overleaf for people to add in their snippets for the Galactic overview paper, and sending out a request to mailing list for people
- Zach: Need to send out updated collaborator agreement forms, been a while since many were updated.
- Zach: Send out a poll with preferences for ZTF-O4 observing cadence. Need to figure out, though, when these would be implemented.

Oct 18, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Cryostat warnings are starting to happen more often, perhaps in response to the recent warm weather, but might be in need of another flushing soon.
- LIGO will be taking a 2-month break starting some time in January.
- Avery: Still experiencing some latency issues, though it is definitely not related to the recent release of alert packet forced photometry.
- Mansi: Seeing some weird behavior with the alert packet forced photometry. It seems to be a subset of the prv_candidates detections, but prv should be a subset of the forced photometry measurements. Not clear what the issue is, Avery/IPAC will be looking into it.

- Don: Christopher noticed that the SNIa Score classifier rate has been lower than average for the past 8 months or so. Trying to look for smoking guns (wavelength solution?, throughput efficiency?, survey coverage/# of exposures?).
- Don: Still working through issues with the KP2.1-m dome. Couple of rough spots where dome gets stuck, might be related to warping caused by the 2022 fire.
- Theo: Had skyportal meeting last week, starting to address some of the issues brought up last week.
- Ivona: Should probably remind WG if they had any sensitive information in their talk/slides to check what has been made public and let Ivona/Lin know if something needs to be removed.

Oct 4, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Ben: Planning to go live with alert packet forced photometry starting on Monday next week (Oct. 10).
- Ben: Image differencing in the southernmost fields if proving difficult, because som eareas fall outside of the regions covered by Pan-STARRS1. This would require significant changes to the pipeline to deal with. I think they are generally referring to the deep reference images being used by the MMA group for GW followup.
- Robert: What is the forced photometry lookback time?
- Don: Planning to wait on the mirror recoating to also replace the optics in SEDMv2 causing the birefringence issue.
- Don: Having ongoing issues with the facility UPS system. Planning to buy a cople of $2K off the shelf UPS systems, since repairing the facility UPS is estimated at $11K.
- Don: Dan McKenna still working to get the dome drive motors fixed.
- Andrew: Calibration team is using blackbody stars (DC white dwarfs) and comparing with calspec stars.

Sep 27, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Some bad weather past few nights and forecasted this week.
- Avery: No major issues with pipeline processing. Alert packet forced photometry still in the works and planned for deployment “soon”.
- Don: Having lots of problems with the facility UPS system for KP-2m, considering buying off-the-shelf UPS units for each computer, though that means they won’t be able to close the dome remotely.
- Theo:
- Lin: Wants working group leads to come up with a slide for talking points related to ZTF legacy products (Mansi will lead a discussion on Wed. morning).

Sep 21, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Lynne: Wrapping up a paper she worked on with an undergrad Summer 2022 applying a classification scheme to a large sample YSOs. Robbins papesr for looking at light curves.
- Avery: Using forced photometry light curves to analyze a set of YSOs (around 100).
- Jan: Got the last few spectra he needed to finalize his sample of cyclotron WDs. Has an Ultracam run coming up in a few weeks, send targets. Otherwise working on several observing proposals at the moment.
- Jan: Has a student working on multiple-star systems in ZTF, will present some results at the next meeting.
- Paula: Wants Jan to send the CV list to a collaborator who has a useful classification scheme.
- Paula:
- Ashish: Yusuf is almost done with anomaly detection in 20 fields. Main categories are sources within Galaxies, bright objects (artifacts), and weird light curves that they need help with identifying.
- Pranav: Working with Kareem putting constraints on inner black hole binaries.

Sep 20, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah + Reed: Operation running smooth.
- Ben: Alert packet forced photometry seems about ready to go, just need to figure out how to deploy it. Hoping to have it done before end of September, this was an NSF deliverable.
- Don: Dan McKenna is out at Kitt Peak working on the dome drive. Order has been placed for the replacement optics in the spectrograph. Planning to make a clone of SEDM's computer (Minar) for SEDMv2 (Orthank)
- Andrew: Nikolas Renault still working on correcting the pocket effect.
- Theo: Fritz performance with multiple tabs open is now much improved. New tabs just pull data from tabs already open rather than performing a full set of new queries.
- Lin: A couple groups are not using up much of their time for individual science talks so there might be some extra time for othr groups.
- Lin: Would like to have me + others perhaps do an SDSS-V data access demonstration. Tom mentioned maybe first week of October.
- Lin: Conference dinner will be at the Ath, in two separate sessions (5:30 and 6:00?)

Sep 13, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Some poor weather, no observing Sunday/Monday.
- Ben: DR19 was released last week. Having some issues processing R. Dekany's planet search exposures (5x300s consecutive images).
- Don: Josiah is working with Kumar to improve scheduling capabilities for solar system object observations with SEDM.
- Don: Dan McKenna heading to Kitt Peak next week to install better control system for the dome. Got quote from optimax for new optical element to solve birefringence problem.
- Don/Lin: There won't be any SEDMv2 talks during the general ZTF team meeting, they'll all be during the afternoon session on Thursday.
- Theo: Working on front end. Trying to improve functionality when people have multiple tabs open.
- Ivona: Working on the final public newsletter, needs input from working group leads.

Sep 7, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Team meeting:
    - Science talks: Kareem, Joseph, Pranav, Natsuko, could have 2-3 more plus the working group update.
    - Ask Jan what his plans are.
    - Ask Boris if anyone at Warwick would like to give a talk remotely or in person.
    - Eric Bellm: Ask him if his students would like to give a talk.
    - Ask Albert and Chow Choong if they would like to give any talks, and see if they can meet for one more meeting this month.
    - Should we have a working group session?
        - Depends on what we would use it for…
        - Thursday afternoon would probably be the best time for it, overlapping.
        -
    - What legacy ideas should we consider?
        - Large catalogs papers, e.g. CV catalog.
        - A paper summarizing all variable star science that has been accomplished.
        -
- Science updates:
    - Ilaria: Low-state polars found in XMM.

Sep 6, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Seemed like there were a few ROS issues on Sunday and Monday, perhaps related to internet connections, but resetting fixed the issue.
- Reed: No reported issues from the cryostat or drier systems.
- Ben: Nightly processing is okay, DR19 on schedule to be released this week. DR20 won't be until January, starting the 4-month schedule.
- Don: Now officially COO staff, will be focusing more on other COO projects but stay involved in SEDM/SEDMv2.
- Lin: Team meeting. Need to decide if the variables group will want to have a separate session, and who all would like to give a talk. Each working group gets 1.5-2 hours. Don't have to use all the time. Also need to think about legacy papers.
- Reed: Been experiencing telescope runaways on SEDMv2. Should have
- Andrew; Nikolas Renault is tackling the pocket effect (brightness dependent PSF shape). Reprocessing all the raw images, taking about 4-sec per image, trying to speed up the process with a GPU cluster.
- Andrew: Changing angle of incidence of light passing through filter across focal plane causes a 2-nm shift in the filter bandpass, a significant enough effect to be relevant to cosmology people. Looking for ways to account for and correct this.
- Theo:

Aug 30, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Astrometry issue was related to GPS being off by 15 second, but somehow the issue has resolved itself. Might be related to wetness somewhere caused by Hillary, which has now dried out.
- Reed: Should be able to apply a new method developed for SEDMv2 to get reliable pointing information for ZTF. Could be a useful diagnostic for issues like this.
- Avery: DR19 ready for release next week
- Reed: No major SEDMv2 updates. Kitt Peak will open to the public again soon.
- Andrew: One night recently where 95% of images failed reduction, and didn't have any stars in them. Look most like images taken with dome closed. Those with stars had low sky as well. So either telescope not pointing through dome slit, or dome slit was not fully open. Could also be related to moisture on the dome controllers/sensors. Issue hasn't happened before or since, so moisture has perhaps dried out at this point.
- Theo: DR19 being ingested on gloria, should be done in about 1 week and ready at same time as DR19.
- Lin: Meeting dates have changed! Now Tuesday - Thursday (Oct. 10-12).

Aug 24, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Roberta: Avery is working on some simulation trying to determin what sorts of Chi2 cuts they would like to apply to YSO in serpens. This region was observed by Spitzer, which was used to assess variability. Goal now is to also assess variability in the optical using ZTF. Avery will be giving a presentation at the Greater IPAC Science symposium
- Paula: Working on GWlib paper, but waiting on data from SEDMv2 and APO. Also working on a compendium of objects, wondering if builders need to be included.
- Eric: XTE binary paper has been accepted. Larger XRB paper has been a bit stalled due to referee comments.
- Mike: Still working with Chester on a paper. Lick run coming up on Sept. 18th.

Aug 23, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: ZTF has been operating very well, no major issues, no damage from hurricane Hillary.
- Avery: DR19 is on track, matchfiles should now be available. Seeing some issues operationally. Seeing a large number of quadrants failing (25-45 percent recently). Seems to be happening primarily at the image subtraction level (poor DAOphot fits?) on the CCD level. Might be an issue with poor flat fields? Or perhaps it's just an astrometry issue, meaning a pointing issue with the telescope. If it gets worse, this needs to be made a priority to track down.
- Don: SEDMv2: had some contractors coming out to fix the dome, but they backed out last minute saying they weren't ready. Also planning to replace the optical element in SEDMv2 causing the berefringence problem (spectra only). Also hoping to get the mirror recoated in the next three months, fingers crossed.
- Ashish: ZARTH now has more than 2000 users in a few dozen countries (1 from Ukraine)! Trying to troubleshoot issues with bright upper limits in prv_candidate alert packet photometry.
- Theo:

Aug 10, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Jan: Student working with Jan has found three more eclipsing AM CVn's. Also continuing to work on the cyclotron WDs, still need spectra for four objects.
- Andrew: No updates.
- Avery: Let him know if you have encountered any issues with the Fritz alert stream. Continuing to work on YSO project.

- Ilaria: In Munich for the past few weeks. Had a grad student working on assessing significance thresholds in ZTF periodograms. A bit slower than expected, no results yet.
- Ilaria: Continuing to work with Tim Cunningham on project searching for seemingly isolated WDs with significant X-ray flux, idea being using X-ray
- Tony: VLASS + ZTF crossmatching, got some followup spectra of interesting candidates. Not sure whether these objects are interesting yet.
- Mike: Has some Lick tnight coming up Around August 18-19. Just talked with Chester, hoping to make progress on his paper.

Aug 9, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: No major issues with ZTF ops. Have been steadily learning about the filter exchanger issues and what we can do to fix it. Might be an issue with some of the magnetic sensors. Could be a software fix.
- Reed: Got some tube humidity alerts past couple of night. Could be tube sealant issue or problem with the air drier system.
- Avery: Source matching for DR19 pretty much finished. DR19 due out around Sept. 7.
- Don: Basic infrastructure still being worked on for SEDMv2
- Andrew: Considering using Gaia instead of Pan-STARRS to get more Zubercal lightcurves for objects that are in ZTF but don't match with any PS1 sources. Examples include high proper motion objects, blended sources.
- Tomas: ZTF + Los Alamos mini workshop August 25 at 9:00 AM.
- Lin: ZTF Team meeting will be from mon-wed Oct 9-11.

Aug 2, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: A few nights of bad weather last week. Filter exchanger got stuck again last night, but ZTF continued to observe in single filter mode (r-band).
- Avery: Doing source matching for DR19. Batch forced photometry system is being heavily tested, two users have submitted about 60,000 sources (each?). Found some bugs in the code to fix. Per-submission upper limit is 1500, per-user total queued-up limit is 15,000. Issue was that IPAC was sending job-complete emails back to people per-source, which over-loaded the outgoing email server.
- Don: Monsoon is ramping up at Kitt Peak. Planning to have an SEDMv2 meeting day before ZTF Team meeting on Oct. 10.
- Lin: Actually thinking on holding the ZTF team meeting Monday - Wednesday (Oct 9-11), instead of the usual Wednesday - Friday.
- Shri: Would be good to make a concerted effort to get people from Warwick to join for the meeting. Might also be good if Ilaria brings someone from VIenna institute of technology.

- Andrew: No major calibration news.
- Ashish: Some issues with ZARTH showing very strange light curves, and different from what Zubercal shows. ZARTH up to 200 users now. Still needs help with anomaly detections.
- Shri: Visiting Los Alamos last week. They are broadly most interested in transient stuff, primarily TDEs, EMGWs, supernovae. Some interest in cis-moon objects and NEOs.
- Matthew: There is an NSF “Astonomy for AI” call.
- Shri: Someone (a SURF student) is working on reducing the H-alpha data from PTF (all-sky).

Jul 27, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Ashish: Would be good to have some people take a look at the anomaly detection sources on Fritz. Jan, Paula, Andrew and myself are in the group.
- Jan: Working on white dwarf with cyclotron paper. Did an extensive literature search to find known sources. Still needs ID spectra for three objects in the sample, which are all currently observable.
- Paula: Working on a couple of papers, also on vacation for the next month.
- Avery: Still working on the YSO paper, looking to finish sometime in Sept.
- Ben: Searching for carbon stars across the whole sky using Gaia XP spectra. We have all the XP spectra downloaded in house now, so any other ideas people have to search for features in XP spectra can be easily explored.
- Ben: SEDMv2 update. Aperture photometry pipeline is now working, but still trying to get better calibrated light curves. There is a lot of structure, both short and long term, that shouldn’t be there. Using Jan’s a Paula’s objects as the test set.
- Ben: Main issues are mirror needs recoating, instrument window gets very dirty very quickly, and there can be a lot of scattered light from the moon, even when far away from source (~60 deg).

Jul 26, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Josiah: Filter arm got stuck again recently (last wednesday). Ran single-filter last Thursday, but fine since then. Instrument temperatures have been fine since the last warming cycle.
- Reed: No problems with ROS.
- Ben: DR19 will be the last DR on the 2-month schedule, and switching to a 4-month schedule after that. Private Caltech data is still being kept proprietary since DR17.

- Don: The KP 4.0-m (DESI) was recently recoated, good news at least that their recoating system is fully operational and can be used for the 2.1m eventually as well. Timeline still unsure for this, but they were aiming to get it done during the monsoon season.
- Ashish: ZARTH has already passed 100 users! Half from US, quarter from India, rest from elsewhere.
- Andrew: IN2P3 still working on the backgroud/pocket effect using new flat fields. Philipe modelnig the transmission of the whole telescope.

Jul 13, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Jan; working on paper on cyclotron WDs & work is progressing on quadruple stars & ULTRACAM nights in mid-November
- Mike; Lick night next week
- Eric; working on referee rapport on Xray sources followup
- Surf student Ruocheng Zhai; working on microlensing events in ZTF. Tony did first 3 years. We now have 5 years of data, and will search the latest data.
- Tony; finished AMCVn paper. Now working on period bouncer from eRosita.
- Paula; working on pulsating WDs in CVs. waiting for some SEDM2 lightcurves.

Jun 15, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Ashish: Yusuf is making progress investigation anamolies in ZTF.
- JJ: Working with an undergrad looking into the WDs that were labeled as variable in Gaia and comparing the periods detected in Gaia with periods detected in ZTF and TESS.
- Lynne: Close to submitting a paper with Michael Kuhn on a new outbursting YSO.
- Paula: Working on a couple of papers , one related to the pulsating WDs in CVs, waiting on some data from Ben.
- Tony: Continuing to work through the ZTF+XMM crossmatch sample and getting followup with Palomar/Keck.
- Avery: Working on YSOs in the Serpens main cloud. Requesting people to start using the batch forced photommetry if you have large samples of objects.

Jun 28, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Ben Rusholme: DR18 is assembled, updating test website, should be ready to deploy on July 7th. Avery is still looking into the missing reference frames.
- Andrew: IN2P3 is continuing to tackle various calibration issues. Mikael Rigeaut is developing his own photometry pieline from scratch so they can control every aspect of the calibration process.

- Theo: Updates in Fritz are primarily related to improved forced photometry and interfacing with TNS.
- Ashish: Continuing to make improvements to ZARTH. Brian now has features on DR16 for the original 20 fields. The period finding is taking very long, 80-90% of the time, and might take longer than we have time allocated on the machines being used.
- Robert: LVK O4 is up and running, though really it's just LIGO at the moment since VIRGO has been having technical problems and has much lower sensitivity than expected. This means the sky localizations are not every good, but ZTF is uniquely capable of covering the large sky areas required to find counterparts. TOO triggering with ZTF has been working well. For less-localized events, they have been modifying the MSIP survey to make sure it covers most of the high-confidence sky area.
- Shri: Highlight from the conference in Illinois. Rubin might be planning to build up references with a modest deep-drilling program, so early science will be possible. Lot of new Rubin tools presented and available for testing. LS4 (ZTF of the south with a 4-filter simultaneous exposure) is expected to come online in 1 year, though probably longer.
- Shri: ZTF updates. Lots of continuing partners (Warwick incl.), a couple new (IST Austria incl.), three Junior members, a few still considering (Stanford, LANL)
- Shri: Continuing to investigate the idea of a CMOS-ZTF, which may also involve a distributed array of small telescopes at Mt. Laguna for Space Situation Monitoring.

Jun 21, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Reed: Small software glitch, but nothing major. Drier system has been fixed!! Trim plate has also been cleaned. Thermal recyle is being planned for next week, prior to the holiday weekend.
- Ben: Avery is looking at the missing deep references, especially in the far south band. Seems like he is seeing that many southern references are missing, which seems at odds with what I have found.
- Andrew:
- Theo: Forced photometry is now submitted automatically for new sources. What does this mean for stellar sources?
- Ivona: ZTF Fortnightly will
- Next ZTF team meeting wll be week of Oct 9-13.

Jun 15, 2023 - Galactic/M31 Meeting - Thursday 11:00 AM

- Jan: Has a student working on finding quadruple stars in ZTF. Already found around 30 objects, student is currently writing up the work.

- Jan: Has eight nights coming up on the INT spectrograph (R~1000) on the Isaac Newton telescope
- Jan: Now the project scientist for BlackGem!
- Mike: Has a few Lick nights coming up (Friday and Saturday), happy to take some targets. Curious about how papers that fall within purview of this group should work, but are kept separate (e.g. Kareem's hypervelocity WD paper).
- Andrew: Mentioned that DESI EDR has happened and could be very useful to this group. Accessing the spectra, and even tables ob object coordinates, is pretty difficult!
- Ben: Observing all week on SEDMv2. Getting light curves out fo the pipeline now, still some bugs to fix.
- Paula: Working on a paper to compile all of the follow-up observations of various samples of objects (CVs, polars, DNe pulsators, etc.)
- Roberta: Using ZTF to work on young stellar objects, anticipating a more detailed update in the next month or so

Jun 14, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Sofie, SURF student working with Matthew on long term variability of AGN in TESS, Using a specific pipeline.
- Reed: Drier system still in the same state. Stable humidity but parts shipment still in limbo. Cooling system still hanging in there, next full moon in two weeks. Rising temperature alerts becoming more frequent (nightly).
- Ben: Avery looking into problems with low-latitutde deep reference images.
- Don: SEDMv2, Dan McKenna has submitted a purchase order for new dome encoders. A new chiller arrived at Kitt peak. Encoders will enable the dome to be remotely resettable.
- Andrew: IN2P3 still waiting on the new flat field ramps. Last published atmospheric model of Palomar is from 1981.
- Theo: Fritz is now using the updated version of penguins, allowing people to query the DR16 light curves on melman.
- Matthew: Current budgeting takes us to October 2024 with the new NSF supplemental funding, assuming we're getting the same from all the partners.

Jun 7, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Matthew: Thermal cycle was not done this full moon cycle.
- Dry air system is still faulting, but huimdity remains low and stable.
- Ben: No major reports
- Mansi: Had an issue where a GW event occurred and the most high probability regions overlapped with an area without ZTF reference images. Might be interested in the quadrant-level reference omage coverage maps I made for the QCS project.

- Andrew: Still working on getting the flat field ramps to incorporate into the IN2P3 calibration pipelineto fix the deferred charge issue.
- Theo: Added crossmatch capability with NED in kowalski. New penquins release version.
- Ashish: At the gaia variability conference. Resolved security issue with Zarth.

Jun 6, 2023 - Galactic/M31 Meeting - Tuesday 6:00 PM

- Chow-Choong will be unavailable for meetings in July and August
- Sent around another paper on Mira variables in globular clusters, looking for comments by June 15th. First P-L for Mira variables in the g and r bands, and i-band though there is much less data so it wasn't included in the paper.
- Ilaria: Showed a couple of odd WD objects that have come from a search for metal pollution in WDs that have significant X-ray flux even though they really shouldn't (e.g. cool, seemingly isolated WDs), work with Tim Cunningham. Two objects have very similar features, Zeeman splitting consistent with 20 MG field, and narrow H-alpha emission that isn't Zeeman split. Not clear where the emission is coming from, perhaps a companion star?

May 31, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Reed: Mountain operations have been running smoothly over the past week. Some small issue with automatic TOO generation, where the fieldID was being sent in as a floating point number instead of a 6-digit integer, should be fixed.
- Reed: 2nd circuit breaker has been replaced, though I couldn't hear clearly what component the circuit breaker belonged to.
- Reed and Matthew: Humidity in the instrument chamber has not been an issue, but the drier system is still not fixed. 3-weeks to get parts which should cost about $10K.
- No SEDM update, Don out of town.
- Reed: SEDMv2 still undergoing commission, and data pipelines still getting developed. Some issue with the focus motor over the weekend, and a dome upset within the past couple of nights. Project to upgrade dome motors still underway (Dan McKenna).
- Andrew: Nikolaus Renault modifying the IN2P3 pipeline to use the new flat fields, but they need a few more flat field ramps. Also working on the pocket effect. Steve Kay was supposed to work on the CCD readout issue (leftover charge), but U. of Arizona doesn't want Caltech to hire him for the job, issue unclear.
- Avery: DR18 processing has begun. Also some changes to the forced photometry service. Developed an online table that can be accessed to check on the status of jobs and also access data from completed jobs.
- Matthew (on behalf of Ashish): Some security issues with ZARTH, but proceeding

- Theo: Figuring out how to implement forced photometry requests in Fritz, as well as TNS submission from Fritz.
- Ivona: Summer school deadline is today, 80 applicants, 20 in person, 60 online. All team meeting presentations are on the meeting website.
- Matthew: Still no word from NSF on ZTF-II extension funding.
- Mansi: Palomar science meeting starts tomorrow. https://sites.astro.caltech.edu/observatories/coo/cooEvents/PSM2023/program.html
- Robert: WINTER is physically on its way to Palomar!
- Tom: SDSS-V collab finalization is progressing, maybe solidified sometime next week.

May 24, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- I missed the first half of the meeting, so some info is missing here.
- O4 is currently running, has been one NS+BH, 2 BH+BH, one bogus object that people thought was interesting.
- Ashish: Brian is now processing DR16 for SCOPE

May 18, 2023 - Galactic/M31 Meeting - Thursday 9:00 AM

- ZTF seems to be working nominally
- What are the legacies for the stellar working group?
    - What are the variable stars in ZTF? E.g. the SCOPE classification effort
    - Spectra with SEDM. How will the data be saved and served? There have been discussions with IPAC to store the data there.
    - Population studies…can we provide selection effect metrics to the public?
    - Large source catalogs outside the SCOPE effort? e.g. ZTF CV sample from Paula and Jan's work?

May 4, 2023 - Galacitc/M31 Meeting - Thursday 9:00 AM

- Paula: Working on a paper collecting spectra of magnetic CVs. Will send around once in a good state.
- Ben: Mostly working on SEDMv2 pipeline stuff, also working on
- David: Comments requested for paper sent around to the working group on May 3rd, would like comments back within two weeks.
- Eric: Also requesting paper comments for draft sent around a couple weeks ago, plans to submit to ZTF pub board in 1-2 days.
- Roberta: Looking into periodicity of YSO sources, still in early stages of project.

May 3, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Still waiting to hear about the status of the cryocooler, a few other small issues that are being tackled with
- Ben Rusholme: Data processing working fine over past week, Avery still working on long-exposures, working out some bugs in new batch forced photometry pipeline, still good to reach out to hime if you have any sources, around 10,000, that could be used to test the pipeline.
- Shri on SEDMv2: Currently out at Kitt Peak with Yashvi and others. Instrument commissioning mostly done, telescope “commissioning” still underway. Main issue is the dome. Each new target, dome motors heat up as the dome moves. Too many movements in a short time will heat up motors to some critical value where they fail, causing whole system to shut down. Possible solution: add 5-minute pause between each movement, even for short exposures. Second main issue is a not having a good pointing model, can sometimes be off by several arcminutes. Goal is to build a pointing model with observations this week. Also not satisfied with the observing/scheduling system, needs more flexibility.
- Andrew: Working with IN2P3 on calibrations. Roger Smith planning to do another shutter timing calibration, shutter time has been sped up so old cals might not be relevant anymore.
- Ashish: Theo working on uploading remaining DR16 data to melman, should be done next week. Once that’s done, should be ready to rerun SCOPE classification.
- Theo: Should be done with DR16 upload of primary grid in 48 hours.
- Mansi: Lot’s of press is out about Kishaley De’s planet engulfment paper.
- Matthew: It’s NASA black hole week, some mentions of ZTF-related projects in the media.
- O4 has begun and rumored to be detecting things, but still engineering time so no alerts have seen sent out publicly.
- Shri on ZTF III and IV: Strong desire among existing partners for 1 (definitely) and 3 (would-like) years of ZTF-II continuation, and even some new partners expressing interest. One idea, partner with NOIRlab to do a joint project, where NOIR gets funding to move current ZTF camera system onto the 1.8m Pan-STARRS1 telescope and Caltech gets funding to put a new CMOS camera on the P48 to go to very short (1-sec) exposure times.

Apr 26, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Reed: Strange issue with the filter sensors, tripped up ROS for a bit until reset.
- Reed: Replaced one of the circuit breakers and removed a dead mouse from one of the dome panels. Didn’t require any instrument down time. Next circuit breaker should be replaced soon.
- Matthew: Status of cooling system. Running some tests at the moment, SW cooling head is underperforming but n oindications yet of a thermal runaway. Considering

whether the instrument will require a thermal cycle once a month to manage this issue, so downtime about 2-days around full moon each month.
- Ben Rusholme: DR17 considering benign delayed from May 9 to May 15, new PID=3 data since DR16 not included.
- Don: Trying to observe a fast-moving NEO with SEDM, didn't work last night, trying again tonight.
- Don: Team (including Shri) going out to kitt peak next week to tackle remaining SEDMv2 issues. Major issue is dome overheating due to frequent moves.
- Andrew: Looking into options for the objects in Zubercal that don't match up with any PS1 sources. Most of these are junk, but sometimes there are missing sources in PS1, or there are transients.
- Andrew: Some images showing weird artifiacts, strong dust spots and "water droplet" like features.
- Avery: Noticing that more objects are failing astrometric quality cuts. Not sure what the exact cause is, could just be weather, could be that some stars are starting to shift significantly from their Gaia DR1 positions, the catalog thats being used to solve positions.
- Ashish: Almost ready to recalculate source features on DR16 data. Waiting on DR16 data to be loaded on to Melman, which has been problematic (Matthew and Theo tackling this issue).

Apr 20, 2023 - Galactic/M31 Meeting - Thursday 9:00 AM

- **Team Meeting Discussion:**
    - **Wednesday Working Group Session?**
        - Ask people who might be attending in person versus remotely.
        - Ask other working groups who might be interested in a separate session.
        - Options:
            1. Don't have a working group session, attend the ZTF+O4 session.
            2. Hack-day session focused on taking a software tool you have created for yor own research, and taking steps towards making it usable by other people (e.g. notebook tutorial, PyPI package, etc.)
            3. ZTF-III discussion. Assuming ZTF-III will happen and have similar survey properties to ZTF-II, what science objectives can we think of, and what tools/data sets might we need to develop to best accomplish our goals?
            4. Writing workshop. A simple writing session, start off by sharing some recent work that you are currently writing up, and then spend 2-3 hours making progress on certain parts of a paper.
    - **Thursday Morning WG Update (20-min)**
        - Zach will be responsible for the working group update talk. Can easily take up the whole 20-minutes, but if someone wants to add in a quick science talk here, that would be welcome.
    - **Thursday Afternoon ZTF Legacy Discussion**

        - On the schedule, there are four simultaneous sessions covering ZTF legacy focused on (1) primary data products, (2) derived data products, (3) results, and (4) methodology, followed by a summary of group discussions from each session.
        - **Need people to contribute some ideas on topics we would like to bring up, and what session they would most likely belong in.**
    - **Friday Morning Science+Methods+Tool Sharing**
        - On the schedule, there are three consecutive sessions with the following categories: (1) Alert filtering/selecting/archiving, (2) data visualization/provenance/distribution, and (3) analysis of lightcurves/spectra/catalogs.
        - **Need people to contribute some ideas on talks they would like to give, and what session they would most likely belong in.**

Apr 19, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Southwest chiller head on ZTF is being problematic. Might require instrument to be pulled off, but spare head is currently being transported out to Palomar. Decision on instrument removal pending.
- Some circuit breakers need to be replaced on P48. Requires full power down of instrument, but switch should happen fast enough to prevent instrument warming up.
- Avery: Working on pipeline adjustments for 300s images. Seeing significant improvements in the amount of data being processed and passed as “good”. RB values probably not reliable though.
- Ben Rusholme: Working on DR17 release, scheduled May 9th. Private data past DR16 will be embargoed.
- Ben Rusholme: IRSA is tackling the API overload issue. Someone is submitting >10,000,000 API requests from varying IP addresses.
- Don: New SEDM Andor camera shows large throughput improvement in the red, minor improvement in the blue.
- Don: SEDMv2, another trip being planned to further resolve any mechanical issues, Yashvi getting close on the spectral reduction pipeline.
- Andrew: Seems to be more images failing (not getting archived at IRSA) than in the past.
- Andrew: Talking with IRSA about back logging new INFOBITS values for older images, and including Zubercal in future DRs. Still in progress.
- Ashish: Working on updating the feature extraction and classification of new sources. Doing some validation tests on period finding algorithm.
- Shri: Sent out a message to ZTF board members to gauge partnership interest in ZTF III, feels optimistic, asking for a response in two weeks.

Apr 12, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Cryohead issues, considering whether it needs to be replaced. Important to determine now since LIGO/VIRGO O4 starts in 1-month.
- Both archon power supplies sent to STA for maintenance have returned, one is still faulty. The original focusing archon is being sent back, while the “backup” archon is now being used to control the focus assembly. archons 3+4 for the camera have been functioning well, though Andrew Drake reported seeing some possible early signs of increased noise in some CCDs.
- Ben Rusholme is looking for more samples of objects (~10,000) to run batch forced photometry on, maybe the Gaia+ZTF WD sample?
- SEDMv2: Still looking for targets to add to the queue, provide Ben with some transiting debris systems.
- SEDM: New Andor cam installed, performing well, similar to old cam.
- Matthew says Shri has received positive feedback from several institutions for support of a 3-year long ZTF Phase III.
- Rubin LSST has had another delay (surprise, surprise). Now scheduled to turn on January 2025, with survey operations starting a few months later, and the first data release in mid 2026. Updates here: https://www.lsst.org/about/project-status

Apr 11, 2023 - Galactic/M31 Meeting - Tuesday 6:00 PM

- Ashish: Has a student working on anomaly detection in ZTF, this might be a tool/method worth mentioning at the ZTF meeting.
- Wednesday working group session: How could we use that time? We could have a “hack day” to talk about all the tools/methods our group uses, figure out how best to collect and organize them, and figure out which tools will be most useful to the overall collaboration.
- Ben: Requesting people to send science targets for SEDMv2. Might get useful data, and they need targets to test a variety of science cases. In particular, specific timing events (e.g. eclipsing binaries) would be useful test targets.
- Chow-Choong: Currently working on MIRA variables in ZTF.
- Ashish: Anomaly and SCOPE are progressing.
- Ashish: Period search is running on DR15 data, excluding any high-cadence data.
- Jan: Working on eclipsing binary WD+MS paper. Also working with a student over the Summer developing some algorithms for detecting quadruple systems. Also looking into the possibility of using ZTF to detect exoplanets. Found a decent fraction of TESS sources with >2% transit depths can be recovered with ZTF.
- Paula: What is the status of Tom’s question with regard to short-period CVs?
- Is anyone keeping track of CVs in ZTF that might be eclipsing? Doesn’t seem like it, might be something work putting some effort into.

- Mike: Lick observing nights next week (17,18,23), wrapping up Chester's paper. To help with Lick observing, we would need to be trained first. Only need help with first half of the nights. Stick with one observing setup to make reductions easier.

Apr 6, 2023 - Galactic/M31 Meeting - Thursday 9:00 AM

- Ben: Reed Riddle is working on developing an auto-focus loop for SEDMv2, Ben is working on understanding the effects of seeing and moon phase/proximity on.
- Jan Updates: Working on big sample of eclipsing white dwarfs paper. Using Ultracam on April 19th. In Chile working on BlackGem operations (working as of 1-week ago!). Has developed some python code for more automated submission and retrieval of IPAC forced photometry light curves.
- Ilaria: Provided an update on projects involving an erupting Mira variable, and a search for massive WD escapees from the Hyades cluster.
- Mike RIch: Continuing to make progress on the paper with Chester Li and Jan. Has observing time at Lick throughout April. Needs assistance with observations during the first half of some nights. Also needs some targets for those night, m<19. Nights are 17,18,23.

Apr 5, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Shri: NSF has not yet said no with regards to a ZTF-II extension, but they have said there is a lot of demand for NSF money at the moment.
- Shri: What is plan B? Skip ZTF-II extension and jump straight into ZTF-III (2-3 years) with partnership-only funding. Still several interested partners (IPAC, Warwick for atleast 1 year, several individual faculty members as minor partners).
- Shri: Air Force opportunity, look for objects in orbit around the moon. Plan is to put some small plane-wave telescopes at a few sites in the southwest, funding would be for 2-5 years, could be used to support continued ZTF operations.
- If moving to the partnership-only approach, we'd have to consider what we can cut back on, e.g. fewer data releases, no public alert stream, no forced photometry service, etc.
- Would be good to look through papers mentioning ZTF and do a more detailed breakdown of what ZTF data is being used (alerts, archival LCs, forced photometry, etc.) and what science areas they are being used in.
- Reed: Thermal cycled the ZTF camera, probably not observing tonight. Josiah and Don are at Palomar installing the new camera on SEDM.
- Ben R.: Avery has been looking into processing issues with long exposures in support of LIGO O4 observations, failure rate is currently too high. Cause has not yet been identified.

- Andrew: Looking at comparisons between Ubercal and Zubercal. Also trying to fix raw images, some issues with readout.
- Yashvi: Have started to observe every night, working on data reduction pipelines. Winter DRP is being modified for use with the data.
- KP 2.1m mirror recoating. Theoretically in the queue to get it done, but not clear how long it might take to actually happen. Actually coating process only takes 2 days.

Mar 29, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- Continuing to troubleshoot archon power supplies.
- Reed and Josiah will be off for a while, need someone who can learn to start up ZTF and do intermittent monitoring.
- Some PIs have requested to keep some ZTF-Caltech data proprietary for a longer period of time. So PID=3 data that has gone public will remain at the 2022-September time.
- Ben: Testing bulk forced photometry service with BTS sources
- Matthew: Melman DR15 light curves are not complete, so be careful when using.
- Don: Installing new andor camera on SEDM next week, might be down for a couple of days.
- Don: SEDMv2 commissioning progressing, asking for targets and people to help with nightly ops. Telescope tracking is now very good, but still some problems with focus and dome.
- Ashish: Would like to tag up with me this week to talk about variability sources.

Mar 23, 2023 - Galactic/M31 Meeting - Thursday 9:00 AM

- Ben, SEDMv2 updates: IFU side has the most ready reduction pipeline.
- Andrew on Zubercal:

Mar 22, 2023 - ZTF Ops Meeting - Wednesday 1:00 PM

- The weather has continued to suck, not much new data coming in.
- Force photometry in alert packets is making steady progress, not sure when this will be released to the public, though.
- Fritz: Working to provide user option in Fritzs to limit the maximum airmass and FWHM values of an observation using SEDM.
- SEDMv2: Needs a team of people to keep an eye on the telescope and the observing queue. Yashvi is in charge of this, Ben Roulston is included.
- SEDMv2: Ordered some new parts to get some things up and running.

- SEDMv2: Yashvi has generated an efficiency curve. Shows signs of severely degraded blue response, likely due to degraded aluminum on the primary mirror. Hopefully, this will be ammunition to get the primary recoated, and maybe the secondary too.
- Andrew: Zubercal website has been released: http://atua.caltech.edu/ZTF/Zubercal.html
- Andrew: Zubercal website is only good at the moment for looking up single sources. Bulk data download capability is in the works.
- Andrew: ZTF CCD 6 is getting worse over time, and has reached the point where data is starting to get rejected. CCD might be degrading, but problem is unknown.
- Ivona: ZTF Summer school has been announced: https://www.ztf.caltech.edu/summer-school-2023.html
- Ivona: Kishaley De's paper on planet engulfment has been published in nature.
- ZTF Team Meeting: Working groups should start thinking about what talks they want to contribute.

Mar 14, 2023 - Galactic/M31 Meeting - Tuesday 6:00 PM

- Update from Chow-Choong for ZTF Firtnightly: The paper on calibrating the gri-band period-luminosity (PL) relation for SX Phoenicis variable stars has been accepted and posted on ArXiv (https://arxiv.org/abs/2303.07554). These PL relations will be valuable once LSST is in operation for obtaining independent distances to nearby dwarf galaxies. The ri-band PL relations are derived for the first time in this paper.
- Paula has finished all the APO reductions for data she had gotten for other people (Jan, Tony, etc.). Now involved in helping with SCOPE efforts.

OLD NOTES BY JAN VAN ROESTEL

20220407

Who is presenting in Paris? Jan (overview), Tony, Zach, Ilaria science talks.

What do we want from ZTF-III?

- Rubin: start April 2024 (might drift further). There will be some overlap at end of ZTF-II
- ZTF-II; ends late 2024
- Different filters? (multiple sets of filters). Deepdrilling the whole sky?

- Note; this request is for the ~30% of the partnership time. Public survey might be very different!
- Note; China is building a 2m survey telescope in the North
- Who continues with ZTF-III? (Warwick?)

ZTF-III; preproposal fall 2023

ZTF is back; started Thursday nights again. One issue; flats were saturated. CCD full-well capacity decreased for some reason. Possible issue with waveform.

Updates:
Mike; Lick deadline coming up. More targets needed.
Tony; found AMCVn in eFeds field
Ilaria; busy with proposals, has a summary website made for all the rotators
Zach; submitted proposals (HST, Keck) to study white dwarfs with debris
Paula; did some APO observing
Jan; ZTF21acohmer seems to show Hb absorption?
Chow-choong send around a paper; please read it and provide feedback.

-

20220324

Rocio Kiman has joined ZTF. She is working on M-dwarf, specifically their age.

ZTF update by Matthew; CCDs are put back into the camera. Camera will move to the telescope by the end of this month. First calibration images are expected April 1st. Will need a few nights to recalibrate the systems.

ZTF meeting in Paris (10-13 May); Meeting in Warwick 16-17 May

Science updates;
JJ Hermes; looking into wide double white dwarfs to check if there are any rapidly spinning WDs
Zach; working with JJ on HST proposal to get UV spectra of WDs with debris
Tony; working on P200 proposal to followup stellar X-ray sources
Paula; working on HST proposal on pulsating WD
Matthew; observing O'connol binaries
Andrew; calibration and bright star issue
Jan; tracking two long-outbursting AMCVn

20220315

- ZTF meeting in Paris;
- Warwick meeting in Paris

Chow-Choon: masterstudent to work on RR Lyrae in globular cluster
Albert Kong; student working on report on the central stars of globular clusters
Paula; Observed with APO, got some spectra for Jan, Tony, and Chester
Lynne; no update
Ilaria; writing proposals; submitted a Swift proposal
Zach; finding He-atmosphere white dwarfs
Jan; discovery of a second weird AMCVn outburst (ZTF21aciubsk)

20220224

Organisational items:

Matthew; ZTF update. At least 4 pellets are still moving around in the camera. Please keep an eye out for issues; your target can fade or disappear.

Meetings in Europe:

- ZTF meeting Paris
- Stellar science meeting Warwick

Meeting in Pasadena (AAS)

Science updates:

- JJ Hermes; looking for white dwarf with transiting debris. Using different algorithms; autocorrelation functions.
- Zach; thinking about HST proposals to get data with transiting debris. (deadline end of March). Working on finding DBVs pulsators.
- Draco Reed; modelling ellipsoidals dWD system.
- Tony; has a draft on 2 new polars found in eRossita crossmatch.
- Ilaria; working on X-ray polarimetry. Wrapping up Janus paper, now working on theoretical models.
- Tom; working with Kevin; submitted a Nature paper on a 51 min cataclysmic variable and resubmitted a paper on a Blackwidow

We ran out of time unfortunately to get updates from everybody.

- Jan

20220215

20220119

ZTF is being installed on the telescope again

Jan: Update on WASP guide imaging

Ilaria; IXPE, working on analysis of first observations. First data Feb 6. Finishing double-faced white dwarf; P=15 minutes.

Mike Rich; Kast nights Feb3+4

Tony R.; 5 variable eRosita sources, very interesting for followup!

Zach; trying to find He-WD pulsators (DBVs)

Bellm: David Wang looking at X-ray binaries, both realtime and archival

9 november 2021

ZTF - no updates
Fritz - interest in python code to upload periods etc. will make a repo for useful fritz codes

Eric; getting latest data. Working on ZTF Xray source
Lynne; found object with periodicity which seemed to disappear
Tony; microlensing paper ready to go, now getting followup spectra to confirm nature of object and measure distances. Got it to work for 1 source; was able to constrain the mass. 2) eRossita crossmatch; lots of CV candidatas
Zach; searching for dipping white dwarfs; found ~6 objects with long dips (weeks, months, years). Got spectra for one object with unusual metal lines
Ilaria; looking at red spectra of rapid rotators
Paula; Q for Tony; how many known CVs are not found by eRossita?
Andrew; working on data quality. Issue with DR, I-band data is thrown away(flagged as bad) because of longer exposure time. Fixed now, will go into DR9. Will also improve quality general. ZUBERcal will be used for DR10. Superclean cut of data (for mmag accuracy).

5-10-2021

ZTF:

- No observing last night due to rain
- Some shutter problems
- No Fritz update
- AAS deadline is next week; no ZTF splinter session. Posters are encouraged

Science updates;

- Matthew; got spectra of O'connell binaries. Very large spectral changes. Half magnitude change in lc; period 6.7hrs
- Lynne; solved the period problem; the ~1day periods are correct (and not the 30-40 periods).
- Chow-Choong; looking at RRlyrae in glob
- Albert; working with high school student to find binaries
- Judy; restarting work on RRlyrae sample and getting people organised.
- Jan; looking into dnn and xgb classifications

28-09-2021

ZTF updates:

- Bit of bad weather and shutter problems, but nothing serious.
- We had a short discussion about Fritz. Improvements should still be posted as github issues, but there will be a Fritz support group that will meet for the Fritz time the week of Oct 11 to discuss issues

Science updates;

- Jan; getting SEDM spectra of suspected magnetic white dwarf. Working on fitting eclipsing WD biinary lightcurves to get system parameters
- Tony; close to finishing the microlensing paper, will start to work on Rositta X-ray match with ZTF
- Amruta; working on proposals
- Matthew; got spectra on O'Connol binaries
- Paula; eagerly awaiting the ML results to get a list of CV candidates

14-09-2021

ZTF updates:

- DR8 is out now. The next release, DR9, will be loaded into Kowalksi. Use ZTF query for individual objects
- Corrections by Andrew will be implemented for DR9 (likely)
- Forced photometry will be implemented for alerts soon

Fritz; “user support group” has been formed

Updates:

- Judy Cohen; no progress on RRlyrae for various reasons
- Szkody; Fritz filters for CVs have been updates
- Ilaria; visiting Kevin. Working on Janus. Making a website with all WD rotators
- Kevin; close to submitting blackwidow paper. Started to work on 51 minute CV with full eclipse. Donor is late F-type star. M2<0.09Msun. Minimum period 12 minutes (20-30 more realistic). Some accretion; hydrogen and helium. Also possible spot
- Matthew; got spectra of O’connol binaries; 20 with ID spectra and 1 phase resolved.
- Andrew; still working on calibrations
- Lynne; we discussed the two long period YSOs. The group is convinced the signal is real
- Jan; Found 2 new AMCVn systems, might write research note. Working on large scale fitting of WD+RD/BD systems

7-9-2021

Two collaborator proposals

- Mike Rich; send to pubboard
- Anupam Bhardwaj; circulated to working group and send to Matthew

31-07-2021

Announcements;

- We got SEDM time
    - Q; how do the priorities work?
- We are working to improve the filters
- The ML classifications project has hit a problem; the performance isn't as good as it was before. This needs to be solved before large scale classification can be done

06-07-2021

ZTF update;

- UPS installed, which should help against poweroutages
- DR6 released (DR7 in 2 months)

Classification project

- DR3 classified
- Needed; people to review the high scoring samples
- October; paper with high-probability

David Wang; graduate student at UW. New to the meeting. Will work on X-ray crossmatch

Eric; looking for Boyajian stars in ZTF archival data. Pick up this project again. Refreshed the selection criteria and made a new set. Now making a final set. Aims for publication in fall. Found a deep dipping CV. Matthew will get a spectrum.

Matthew;

- working with summer students on O'Connol binaries in ZTF, starting now.
-

Paula; not much news on CVs. Request; can Keaton join as a collaborator?

David K.; no update
David W.;
Lynne H. no update
Andrew;

16-06-2021

ZTF news

- ZTF; no news
- Fritz;

- Ashish; dippers
- Szkody;
    - working on referee rapport for CV paper 2.
    - Ilaria will be featured in newsletter
- Kuhn; Galactic Archeology. FU Ori filter getting lots of giants. Fixing a bug in filter related to null values.
- Michael Coughlin; got 3 more large amplitude objects to get spectra for
- Albert Kong; will update Twiki.
- Chow-Choong; working on RR lyrae in globular clusters
- Lynne Hillenbrand; no update
- Jan;
    - Got 16 hours of Gemini time to get spectra for blue outbursting sources
    - Working on referee rapport for ZTFJ0038+20
    -

8-06-2021

No ZTF updates
Fritz is now able to display PSF photometry; still some minor issues to work out.

Updates;

- Dragon Reed; working on analysis of 43min double white dwarf
- David Kaplan; no ZTF update
- Andrew Drake; continue to work on calibration
- Boris; joined for the first time, plans to ramp up work on white dwarf science around August/Sept.
- Jan; did some observing, found a new CV with very long outburst

25-05-2021

ZTF update

- Power problems
- Coolant leak; might run out because the spare is also leaking
- IRSA has dr6; will be available soon to inspect

Science updates

- Graham; working on AGN, preparing to work with summers student
- Paula; referee rapport for CVyear2 paper.
- Eric; X-ray counterpart filter; Eric Wang (PD). Looking for longterm outbursts with sources with X-ray counterparts.
- Michael; FU Ori filter; slow but continuous rise in brightness. Main contaminant LPVs and AGB stars. In some cases irregular pulsations which can make it difficult. Useful annotations; Mg (using gaia), and WISE spectral index.
- Kevin; periodsearching all ZTF data using LS down to 2 minutes (using PS source catalog as input catalog). Dense fields don't fit into RAM, now doing least dense fields first. 5-10.000 systems with periods of P<10min. Will produce catalog with ra,dec,PS_id,period,significance. 2) got Hipercam data
- Jan; 'outbursting AMCVn' paper published; WD+BD paper submitted; eclipsing AM CVn paper: processing feedback

18-05-2021

ZTF: network problems and shutter problems

Chow-Choong; presented recent paper on period-luminosity relation on WUMas in globular clusters.

Dragon Reed; start to work on new discovery

M. Kuhn; working on Fritz filter, finetuning at the moment

Lynne; looking into NeoWISE lightcurves. Want to combine IR with optical

Amruta; looking at X-ray counterparts, got a Nustar proposal in

Graham; no update

Ilaria; working on DBSP pipeline. Looking into population of rotators. Very strong Ca line

11-05-2021

ZTF update;

- Faulty sensor detected a coolant leak. Sensor is being replaced
- New partner; University of Warwick will join. Expect to join by October the latest.
- Partnership meeting; June 2-4

Fritz: Ability to see archival lightcurves is being implemented. DR5 is available on the gloria machine. This broke the ZTF-variable marshall; needs to be updated.

Science updates:

- Tony: Found 20 new microlensing events in DR4 data. DR4 missing ~50% of data, DR5 should be much better. Also finding many variables; will write up a report and list of objects
- Michael Kuhn; made a Fritz filter to find YSOs. Work in progress, but has slope fitting implemented. Still finding LPVs as false positives.
- Lynne; working on YSO fieldguide
- Paula; fieldguide for CVs is done
- Matthew; working on proposal and NSF report
- Jan; 1 paper submitted and on ArXiv, 1 paper with pubboard, 1 paper will be submitted to pubboard this week. Observing with P200. Got a few spectra of CVs and rotators. Chimera lightcurves of eclipsing AM CVN systems.

Coming up: ZTF team meeting June 2-4, Keck time in first week of June (4-6, LRIS ESI).

27-04-2021

ZTF update; 2 nights downtime for engineering; some shutter problems

Discussion on uploading catalogs and alerts:

- CV catalog
- WD catalog?
- YSO catalog?
- VSX catalog? (2M)

Discussion on variable star catalogs. Who should manage the variable star catalogs (similar to TNS). ZTF variable catalogs will be public.

contact : AAVSO

Bellm;

- Searching for X-ray counterparts; David will start after the summer
- SWIFT LMXB found with ZTF

Paula;

- Paper CV ZTF-II.
- Claire working on fieldguide. Nova needed.

Graham;

- Using Gaussian processes

Andrew;

- Working on R-band calibration

Jan; working on three papers (see Twiki page)

- Outbursting AM CVn paper; approved by pubboard
- Eclipsing WD+BD paper; to be submitted to pubboard
- Eclipsing AM CVn paper; send to co-authors

20-4-2021

ZTF updates: ZTF will be offline for two days for maintenance.

Fritz: http://www.star.ucl.ac.uk/IGAPS/data.shtml is now in Fritz

Fritz request; email alert if anything matches on watchlist

Science updates;

- Chow-Choong; Paper on contact binaries published, will get back to RR lyrae in globular clusters
- Albert Kong; working on watchlist of Fermi sources
- Szkody; working on ZTF-CV paper. Feedback by pubboard being addressed now. Will submit in a few weeks.
- Matthew; no progress, working on proposals
- Jan; working on 2 AM CVn papers and a paper about a WD-BD system (see paper section)

13-3-2021

ZTF meeting
Shutter issue might be fixed, might do 2 engineering nights.
Fritz; development ongoing. Need to review what needs programming. Invite Dima to variable workingroup

Updates:

- Tom; we had a LISA meeting about pre-LISA EM observations. Summerstudent interested in AGN periodicity. Send periodic Fermi objects to SRG, got back 4 objects. Maybe YSO?
- Matthew; working on OConnel systems. A visual confirmation is still needed. Using Baron to check for trends. They are typically classified as EA, EW or just as binary star. The EA and EW are not always classified as a binary. We need to figure out what the propagation up and down the classification tree is.
- Paula; CV year2 paper send to pubboard. To check 76 candidates from Ofek paper.
- ...
- ...

30-3-2021

- ZTF had some power outages last Sunday, robot arm got stuck. Also some network problems, either on mountain or campus
- DR5 out today

Science updates;

- Matthew: looking into scope classifier, focussing on the eclipsing binaries to find O'connol binaries. Outliers can be a problem.
  HR diagram; luminosity and spectraltype overlay
- Ashish; dipper filter is running.
- Lynne; interested in getting a filter implemented
- Paula; CV filter is working now. Please look at paper so it get be submitted.
- Ilaria; JWST propal accepted. Now got models for magnetic white dwarfs
- Amruta; working on palomar proposal.
- Tony; looking into Galactic plane data to find microlensing events. Weeding out false positives. Also looking into WDs with dips
-

23-3-2021

Shutter problems still not solved

- DR5 next wednesday
- P60 will be offline

- Chow-choong; waiting for dr5, looking for RRlyrae in globulars
- Albert; working on watchlist in Fritz. Seems to work now. Q; any possibility to get automatic alerts
- M; ...
- P Szkody; CV paper on Twiki. Claire working on CV filter. Some Growth sources are not in Fritz yet.
- Michael; working on ingesting catalogs in kowalski and processing
- Andrew; I-band calibration is working pretty well. R and g surface fitting are running. Looking into dr5 (compleness). New calibration will be in

The ZTF fieldguide can be found here; https://scope.ztf.dev/

16-3-2021
ZTF update; some shutter problem. Problem identified and resolved. Bad weather, so not much data last week. New DR5 at the end of the month. IRSA first, Kowalski ingest later.

Individual updates:
MISSING

23-2-2021

New; Tony Rodriguez.

Graham; periodfinding with Gaussian processes.

ZTF updates; nothing unexpected, dr5 month away.
Kowalski dr4 is note complete, IPAC does have all the data.

Chow Choong; paper from RRlyrae in globular cluster to pubboard. Paper does not incl Search for sources Fermi counterparts and ZTF. Compare with X-ray catalogs. R (Michael); already done some of this work. Request for list of eclipsing binaries

Michael; BOK observing run and got spectra. Draco is looking at the spectra.

Tony; search for microlensing candidates. Using vonNeumann and skew parameter. 90 false positives. Applied on R-band curves. M: need to correct lightcurves with color terms.

Matthew; high amp variables have good periods. G and R can be different. Trying to subclass the lightcurves based on shape and colour difference between lightcurves.

16-2-2021

ZTF updates:
Weather is variable, got some observations with ZTF
Some shutter problems
ZTF DR4 in kowalski
ZTF alerts schema changed; has forced phot, will go in around april
2021A; 50% MSIP; 30% partnership (small fraction Galactic); 20% caltech

Science updates;

- Amruta; GBT observer's training (Green Bank). Monitoring a sources with ZTF
- Ilaria; working with Kevin to create a database for white dwarfs (Fusilio dr3 in progress). Matching with Galex to make a catalog with radii and temperatures. Got hands on magnetic white dwarf models. Models are useful for polarimetry, maybe for the UV
- Paula; APO night snowed out. Requested to have the ML CVs in Fritz
- Matthew; Looking at O'connol, comparing ZTF selection with Michaels high amp set and ATLAS set. ZTF DR2 periods are not good enough to fold DR4 data.
- Eric; known LMXB found with ZTF. Got Swift followup. Might be fading, possibly minioutburst.
- Przemek; working with student to find long microlensing events. Some quadrants missing in Kowalski. Preparing talk
- Andew; R-band calibration. Progress slow due to IO.
-

2-2-2021

General updates
Variable features are added to the Fritz Marshall

Science round:

- Amruta; GBT time for followup of Fermi sources, proposal 19th.
- Paula; looking into CV, comparing ML output with alert filter output
- Przemek; looking into measuring mass of Galactic microlensing events, eagerly awaiting DR4 data
- Kevin; working on Blackwidow triple system, put in HST proposal, to separate the Blackwidow from the tertiary. HST will get SED to separate variability. E/dt=10**35 ergs/s @ 500pc; but no X-ray detection(?!) Unusually low. Try with NICER? System maybe ejected from a globular cluster. Working with TESS group at MIT;
- Lynne; no science update
- Andrew; working on time dependant calibration issues
- Matthew; comparing ATLAS variable star and ZTF classification we have (DR2). Some sources show a colour-dependance. Making a good training set of O'connell systems for more detailed analysis. Try Gaussian Process fitting which should get better fits.
-

2021 -01-19: Variable meeting.

AAS: good meeting, very busy on Slack. Exhibitors had a difficult time, but overall a good meeting. Summer meeting is TBD (remote or in person). [La Serenna summer school and ZTF summerschool also in August].

Spintersession on Tuesday. 32 participants, Kevin gave a talk, Eric and Dave Shupe introduced new stuff for phase 2. Few questions on slack. General impression was OK.

ZTF is running, but high wind warnings (fire risk, power outages etc).

Fritz

TESS proposals;
Kevin; finding CO binaries, putting in lots of 2min cadence candidates selected using Gaia HR diagram from just above the WD track
MJG; AGN, resubmission
MJG; O'connell binaries with ZTF and TESS
JvR; EL CVn binaries
PM; resubmission of BH-MS binaries proposal

Science updates;
BlackWidow is a triple; a 1000 yr period outer period with a K-subdwarf

12-01-2021

- C.-C. Ngeow: working on the PL of contact binaries in globular clusters, can present preliminary results on the next meeting
- A. Kong: no major updates

04-01-2021

ZTFupdate; no problem

DR4 uploaded to Kowalski this week (hopefully)
ZTFsplintersession next week Wednesday
Fritz; goal is to have variable star support in Fritz by the end of the month (Beta phase)

- Paula; AAS meeting prep, everything recorded and slack comments saved. Request to get ML scores into Fritz. Has APO run later this week
- Ilaria; working on rotator sample paper, giving two COSPAR talks
- Kevin; blackwidow system, reading up on irradiation problems, using Icarus code. U-band LC needed.
- Eric; scheduling work for ZTF, putting together poster on ASASSN 19yt
- Amruta; also working on poster
- Przemek; forced photometry pipeline ready. As good as a standard pipeline at the bright end. On the faint end, 0.5mag better (fainter).
- Draco; LCO 2m proposal accepted. Will need targets this summer
- Andrew; calibration work ongoing
- Tom; thinking about the black widow system
- Ashish; prepsing AAS, getting back to classification work
- Matthew; searching for O'connell binaries. Using statistics DR2. For most of the EBs, the period is wrong (needs to be doubled).
- Jan; learning about Temporal Convolutional Networks; referee report for SCOPe1, eclipsing AM CVn systems

15-12-2020

General updates:
I-band failure, there are still issues with the shutter

Science updates:
Matthew: searching for O'Connell binaries
Andrew: working on calibrations, looking into background variations due to clouds
Eric: working with undergrads on searching for black-widow-like objects; working on X-ray outburst filter
Jan: working on the LISA proposal, found fifth eclipsing AM CVn binary
Lynne: no updates
Paula: working on Gaia EDR3 parallaxes for CVs
Yuhan: working on a new SRG source
Przemek: working on the forced PSF photometry pipeline

7/12/2020

General updates

Chow-Choong; working on contact binaries in clusters. Fitting P-R relationship
Coughlin; working on high amp catalog. Looked through everything by eye. KPED; problems with KPED focus motor. Pointing models to be implemented.

Paula; working on CV list
Przemek; working on forced photometry. Is very fast, but still working on improving
Matthew; looking into highprob eclipsing systems to find O'connell binaries.
Jan;

1/12/2020

General updates:

- ZTF has shutter issues, which seem to come and go. Weather is OK.
- DR4 will be out in a week, 9th
- Gaia EDR3 December 3rd; 20% parallax improvement
- Fritz; meet and greet tomorrow. Email to be send around by Matthew. Fritz now has more detailed alert classification.

Update by Yuhan

Galactic SRG source discovered last week. Associated with optical ZTF source. Likely a massive X-ray binary.

Science updates:

- Mroz; working on forced photometry pipeline for all sources, results look promising
- Burdge; working on Blackwidow system (candidate) 62min period. No high energy signature, no radio. The reflection is too strong for a white dwarf. Lightcurve seems to be asymmetric, due to heat transport. Question is if the accretor is a very hot WD or a NS star.
- Lynne; working short paper on Gattini discovery
- Paula; CV year2 paper. Q; ZTF18aaxdlbl 90min period. Likely a polar,
- Jan; resubmitted classification paper, wrapping up AM CVn paper now.

24/11/2020

General updates:

- ZTF: some problem with the shutter. Possibly a limit switch problem. ZTF partnership observing is still TBD. Start of observing will be December 1st. 50% is MSIP-2day survey. ~10% transient highcadence (6obs g&r per night), ~10% I-band. Fractions vary over year. ~10% twilight observation. Small amount for SRG-shadowing.
- Fritz: speeding up alert ingestion (using Dask). Alerts are now ingested faster, but still some memory problems. A small number of 'variable-star' features have been implemented.

Science updates:

- Michael; KPED is back online, robotically. Has set up a slack channel. Trying to make scheduling and data reduction easier. 100% funded by Caltech, but high priority targets are welcome from anybody from ZTF. Either send me, Michael, Kevin an email, or join the slack channel if you want to do it yourself.
  Other work; looking into high amplitude variables. Wrapping up DR3 data processing (with LS, AOV, CE).
- Paula; looking into CVs; comparing alerts and ML classification. Working on a full catalog of CVs from all kinds of surveys.
- Tom; showed a comet discovered by ZTF last year and recovered again this year. Useful for orbit determination. 2) a student worked on finding sdB-dM systems (HWVir systems) research note about this has been submitted. Tom encourages publishing more research notes.
- Chow-Choong; working on compact binaries in globular clusters (~30). Student working on the project.
- Albert Kong; no scienc updates
- Jan; working on ML verification. Found some weird anomalies. Resubmitting classification 1 paper. Busy wrapping up AM CVn paper.
-