

ZTF Partnership SEDM Usage: SSC Recommendations

22 March 2019

Following review of the 14 proposals submitted by the ZTF collaboration in response to our CfP (http://www.oir.caltech.edu/twiki_ptf/pub/ZTF/SEDM2019Proposals/SEDM-2019.pdf), the SSC makes the following recommendations:

For scheduling purposes, we divided proposals into four categories (A-D), based on the required urgency of observations and the anticipated scientific return from the request. Priority A are those proposals requiring same-night SEDM observations (thus making the strongest use of P48+P60 synergy). Priority B are those proposals requesting modest amounts of SEDM time for spectroscopic classification, though these observations need not be conducted the night of discovery. Priority C is reserved for the Cosmic Census of Bright Transients Program (large, magnitude-limited complete sample of spectroscopic classifications). Priority D is for all other programs.

Priority A requests should (barring exceptional circumstances) take precedence over Priority B requests, etc. Within each priority grouping observing order can be determined by visibility considerations (or prioritization by the SEDM Czars). The motivation was to provide an observing program that is flexible with respect to weather, instrument performance, etc., while also being easy to implement. **Users will still have the ability to trigger all priority classes within the marshal - however we request that barring exceptional circumstances they limit their requests to priority categorization.**

Our recommendations for allocations, including the categorization of the proposals under this framework, are listed below. Note that proposals from some science working groups were split based on topic, given the different time scales involved. **We emphasize that these should be reevaluated after several months of operations to determine changing needs of the various science groups and external conditions. We expect to conduct such a reexamination in ~ June.**

Group A (Marshal Priority Levels: 5-1):

- Catching the Early Light of ZTF Supernovae: 96 hr

Allocated in full. The team should work with the submitters of the proposal "Pilot Program for Robotic Spectroscopic Follow-Up" (i.e., via AMPEL) given the essentially identical science objectives. No additional time is recommended currently, but this can be revisited as the testing of the automated pipeline comes along.

- NEA Spectra: 57 hr

Provisionally a

vide some (short) additional details regarding the number of candidates whose orbits can be determined early enough to catch at closest approach. **We also request the proposers work with the SEDM and/or GROWTH marshal teams to determine an automated and robust means of requesting observations.**

- Gravitational Wave Follow-Up: 30 hr
Allocated in full.

- Neutrino Follow-Up: 12 hr
Allocated in full.

- The First Optically Selected Population of Relativistic Afterglows: 8 hr
Allocated in full.

- Cometary Outbursts: 8 hr
Allocated in full. **We also request the proposers work with the SEDM and/or GROWTH marshal teams to determine an automated and robust means of requesting observations.**

- Fermi Short GRB Follow-Up: 5 hr
Partial allocation. Only candidates showing strong evidence for fading or possible kilonova signatures should be triggered with P60 - alternate resources can be used for other candidates.

Group B (Marshal Priority Levels: 4-1):

- An unbiased stripped-envelope supernova sample from ZTF: 50 hr
Allocated in full.

- Unusual Transients in Elliptical Galaxies: 30 hr
Partial allocation. If the performance of the new identification pipeline does indeed produce the number of projected candidates, this allocation can be supplemented during the reexamination period.

- A Complete Spectroscopic Sample of Bright TDEs and CLAGNs: 27 hr
Allocated in full.

- qLMXB/CV Outbursts: 21 hr
Allocated in full.

- Monitoring of main-belt active asteroid candidates: 18 hr

Allocated in full. **We also request the proposers work with the SEDM and/or GROWTH marshal teams to determine an automated and robust means of requesting observations.**

- Characterizing Transients in Galaxies Similar to SLSN Host Galaxies: 14 hr
Partial allocation. We did not see a sufficiently strong motivation for rapid-response (i.e., same-night) observations of these sources, as anything known to be young would be covered by the Young Supernova program. Similarly, the need for imaging on time scales of days to a week was not as strong, when such SEDs could be generated by other facilities (i.e., LCO, or even Swift).

- Measuring the asphericity of CSM around massive stars using ZTF SNe IIn on the rise: 10 hr
Allocated in full.

- M31/M33 X-ray sources: 8 hr
Allocated in full.

Group C (Marshal Priority Levels: 3-1):

- Cosmic Census of Bright Transients: 1168 hr
Allocated in full. The prioritization we suggest provides significant flexibility to this program to determine where exactly to set its threshold for the magnitude limit. **We urge the team to continue to aggressively reach out to other (non-supernova) working groups to coordinate target submission and share classification results.**

Group D (Marshal Priority Levels: 2-1):

- SEDM Czar Discretionary Time: 30 hr
Partial allocation. This can be adjusted as necessary during the reexamination period, but this seemed like a reasonable place to start.

- Rotationally Resolved Spectra: 36 hr
Allocated in full, but with low priority due to the lack of time critical nature of the observations (which thus could be conducted with other facilities). **We also request the proposers work with the SEDM and/or GROWTH marshal teams to determine an automated and robust means of requesting observations.**

- Probing the light curves of ZTF CC (Type IIn) supernovae: 12 hr
Allocated in full, but with low priority due to the lack of time critical nature of the observations (which thus could be conducted with other facilities).

- Weekly observations of Ho Pup if caught flaring: 8 hr

Allocated in full, but with low priority due to the lack of time critical nature of the observations (which thus could be conducted with other facilities).

Other Programs:

Pilot program for robotic spectroscopic follow-up:

As discussed above, we request the proposers work with the “Catching the Early Light of ZTF Supernovae” team to facilitate robotic follow-up of young supernovae. We recognize there may be some “false alarms” as the system is developed - we can assess if additional time is necessary to achieve this science during reevaluation.

Neutrino correlation study:

We have allocated a robust RCF program for Year 2, following a large allocation in Year 1 as well. The committee would like to see results from the correlation analysis from these observations before allocating additional time to go to fainter magnitudes for those transients potentially associated with neutrino events.