



Minor Planet Center

# Newsletter - June 2024

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2024 JUNE 30

In this month's issue:

[Subcommittee for singletons and archival observations](#) | [Summer students](#) | [Meetings](#) | [Hiring](#)

## Subcommittee for singletons and archival observations

In recent years there has been an increase in the scale and accessibility of public data archives, as well as in the availability of new software tools to search and extract data from said archives. This has significantly lowered the barriers to finding, extracting and submitting archival data to the MPC. While this represents a huge opportunity for the community to better utilize extant data, and for the MPC to improve the orbit catalog, it also presents the MPC and the community with some challenges related to ensuring that the quality of the submitted measurements remains high.

One concern is that occasional erroneous measurements of images from public archives might be submitted by third party users. Single measurements can be especially problematic when reported for an opposition for which no other observations are available. These single observations have the power to change the orbits and, especially in the case of objects that are already on the [Sentry risk list](#), they can influence the impact probability computation.

The MPC has long implemented a number of measures to weed out inaccurate observations. For example, we maintain a list of users who are allowed to submit single measurements, as well as requiring the submission of a sample of observations of known objects before assigning an observatory code. We also maintain an [updated documentation](#) on the criteria we use for accepting or rejecting identifications. Some of these criteria include checks on the number of nights and on the arc length of the submitted identification. In general, the MPC's submission policy expects the data submitters to do their due diligence before submitting the observations, but we also understand that sometimes it can be difficult for users to establish the validity of the extracted observations.



To address the issues, the MPC and the MUG have formed a committee of impartial external experts to help review individual cases, and to develop policy recommendations for vetting and publishing singletons and archival observations. The initial committee consists of six members: one member from some of the main surveys: PanSTARRS, ATLAS, Catalina, and NEOWISE, one member with follow-up experience, and one non-NASA-funded astrometry expert. Additional experts can always be added on a case-by-case basis. The committee and the peer-review process will only provide recommendations to the MPC: the MPC will always have the ultimate decision.

To allow individual users and the committee to communicate, the MPC will use the [Jira Helpdesk](#) system. We completely rely on the Helpdesk for all the communication from the user community and we find Jira very useful and helpful. The Jira approach has also a few additional advantages: (i) It would be very easy for the MPC to manage the project if we keep it in Jira, (ii) Priorities could be assigned to the different tickets, according to the status of the submitted observations (e.g. high priority could be reserved to singletons submitted for virtual impactors), (iii) Everyone should be able to open a ticket requesting a review of their observations if they are not sure about the quality of the observations or if they prefer to get an external opinion.

We have just started the implementation of this new mechanism and we have already selected a few cases to use as a dry-run. We apologize if at the beginning this whole process seems slow, but we are all learning from it. We hope to have something more easy to use in the next few months. Also, we would like to thank the submitters that have accepted to go through the first reviews and the committee members for their work.

For the moment, the review process is still fully manual:

1. The review can be asked by external users, submitters or by MPC members.
2. A Jira ticket is then opened with the corresponding request and the submitter is notified.
3. Once the observations are under review, the status of corresponding Jira ticket is set to *Pending review*.
4. The committee members can then interact with the User/submitter via the Jira ticket and they can ask for additional information.
5. Once the review is done, the submitter is then informed of the result.



In the future, we expect to have a more automatic selection of the cases to review and to make this process as fast and easy as possible. We will also create a dedicated documentation page on the website.

Comments and feedback are always welcome and appreciated. Please use [Jira](#).

We always appreciate everyone's help while we try to improve our system.

## Summer students

The MPC is very pleased to welcome three new summer students that are going to work with us for the next 10 weeks.

- Milagros Tamara Giraldo is an undergraduate student at Bridgewater State University (MA). She is currently working on orbit fitting of short arc objects to understand and improve our definition of discovery.
- Kimberly Armas is a recent graduate from Harvard. She is going to work on some of the tests that the MPC is performing with the NEO Surveyor team.
- Eugene Lee is a high school student from the Cambridge Rindge and Latin School in Cambridge (MA). He is going to work on checking and correcting (if needed) the station coordinates for the observatory codes in the observatory file. If you know that your coordinates need to be updated, please let us know using [Jira](#).

## Meetings

### TNO 2024 (Taiwan) and IAU General Assembly 2024 (Cape Town)

The MPC is trying to maintain its presence (virtual or in person) at some of the major conferences for planetary science. The goal is to have a continuous interaction with the users and the community and to improve our communication. Staff members were present during the [TNO 2024](#) meeting in Taiwan (June 23-28) and they will be available during the next [IAU General Assembly in Cape Town](#) (August 6-15, 2024).

In addition to that, the MPC is also going to give an update of their most recent developments during the next [SBAG virtual meeting](#) (July 11-12, 2024).



## The MPC is hiring!

Three positions have now been posted on the CfA website:

An MPC *Software Developer* position:

<https://cfa.harvard.edu/opportunities/sao-employment-opportunities/posting-24-34>

An MPC *Astronomer* position:

<https://pweb.cfa.harvard.edu/opportunities/sao-employment-opportunities/posting-24-35>

An MPC *Database Administrator* position:

<https://cfa.harvard.edu/opportunities/sao-employment-opportunities/posting-24-36>

Working at the MPC can be both fun and challenging at the same time, especially now that we are getting ready for the new surveys, while trying to improve our current system.

Please consider applying for a position if you are interested in working with us!