Tufts UNIVERSITY

SCHOOL OF ARTS AND SCIENCES

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Dear Joe, George and members of the NED team,

This is a report of the telecon held on July 20 2020. The major agenda items were: 1) an update from the NED team on their activities since our last meeting in December, 2) the results of the NED Users survey, and 3) a discussion of the results of the Astrophysics Archives Programmatic Review 2020. A summary of the key points discussed on each topic is given in the paragraphs below.

The NUC were impressed that even in a very challenging year like 2020, the NED team have kept up with their regular schedule for both data and software releases. We agreed that to maintain its value to the extragalactic community, NED needs to be the carefully curated database it has always been. However, the associated vetting and validation steps have meant somewhat slow data ingestion rates. In our previous reports (including our number 1 recommendation from our January 2020 report), the NUC have always stated the need for increased rate of data injestion to decrease the lag between publication and data inclusion into NED as well as to just keep up with the ever increasing data volumes. We are also very pleased with the recent work at NED to speed up the validation/injestion process by parallelizing it among several team members effectively (along with increased use of machine learning and updates to MatchEx). There were some concerned raised by the NUC about the consistency of the validation standards when multiple people are involved but the NED team described satisfactorily the steps they are taking to maintain consistency. We all agreed, this is a step in the right direction while ultimately success in keeping up with the literature hinges on the data being prepared in NED-friendly format by the authors themselves.

Next, we discussed the results of the NED Users Survey. This survey affirmed the significant role that NED plays in both professional astronomers research activities, but also as an education tool in the classroom. The majority of respondents, 70%, reported consulting NED more than a few times per month (Q1) and 71% of respondents indicating that NED is at least very important to their research or teaching (Q3). A key result was that the images and spectra held within NED were considered highly important for research (2nd and 4th ranked of 11 data-types), with Level 5 Knowledgebase UI continuing to receive strong use (5th in terms of the 9 UI features).

This brought up a discussion at the meeting since the injestion of new images and spectra and the maintenance of Level5 are currently discontinued. These activities were part of the OverGuide request in the NED proposal but it is not yet clear if they will be funded. In this context, we discussed that many journals now require that the original data upon which a publication is based be publicly available and not just on people's personal websites but in well maintained repositories. Currently, for small observing campaigns (as opposed to large surveys with their own data repositories), NED is the best (perhaps only) place to save the reduced images and spectra such that these data are not lost and are accessible to researchers and educators in the future. Therefore, we urge that this activity be restored to NED at whatever level possible.

The bulk of our time was spend on a discussion of the report from the panel Astrophysics Archives Programmatic Review 2020. We were pleased that the panel overall rated highly NEDs proposal and identified several strengths were in line with our own views of NEDs strengths — in particular its critical role in the extragalactic community as the go-to place for information on the properties (observed and derived) of any known extragalactic object. We agreed with the review panel's view that a unified Science Platform is needed to allow for science closer to the data and do so in the most efficient way. We discussed in more detail the points that were identified as weaknesses in NED's proposal by the review panel.

The first weakness follows on our discussion above — i.e. the inefficient rate of data injestion. As discussed earlier, NEDs efforts here are already improving this rate We suggest that the NED response to NASA should explicitly highlight the recent efforts at NED to develop a more efficient, parallelized, frequent and automated source ingestion process (see above). But, ultimately, what is needed is better coordination with the journals (and also ADS, arXiv.org) such that the data be published in more NED-friendly format. We discussed at length the upcoming August 28th meeting with the AAS Publication Board. The NED teams aims to push for a feature where upon submission of a paper the authors are asked for which archive there data are suitable and if they click "NED" they be taken to a NED website that gives templates and examples for the needed NED-friendly data tables. This ultimately will speed up significantly the injestion into NED. We agreed on a report to NUC from NED after this AAS Pub Board meeting.

The panel had also identified as a weakness "duplication of efforts with ADS" but the NUC was not clear what that meant. In our discussion, we did not find any such duplication. ADS does not provide the cross-matches with NED, it queries NED for said cross-matches.

The review panel viewed the OverGuide request for NED to increase its support for time-domain astronomy as "infeasible". They described the many potential systematics with constructing potentially heterogeneous light curves. However, it was clear from the proposal that NED is not planning to build its own light curves but just to provide the time stamp for each photometric point (going forward), as well as the information that a given source is known to be variable with a link to other sites where light curves are available (e.g. from ZTF). The NUC discussed that the aspect where NED can have the greatest impact in TDA is in host galaxy identifications (through an expanded version of its current GWF). This hinges on increasing NED's redshift completeness through for example injestion of more photometric redshift catalogs as well as key ongoing imaging and spectroscopic surveys such as DESI. Funding for inclusion of such catalogs is in the first item of the OverGuide request.

The NED User's Committee

Dr. Rachael Beaton, NASA Hubble and Carnegie-Princeton Postdoctoral Fellow
Dr. Brad Cenko, NASA Goddard Space Flight Center and University of Maryland (was not able to attend the above meeting)
Dr. Mansi Kasliwal, California Institute of Technology
Dr. Mark Lacy, National Radio Astronomy Observatory (NRAO)
Dr. Andrea Prestwich, Smithsonian Astrophysical Observatory (SAO), Chandra X-ray Center
Dr. Anna Sajina, Tufts University, (**Chair**)
Dr. Ohad Shemmer, University of North Texas
Dr. David Schlegel, Lawrence Berkeley National Laboratory
Dr. Sabrina Stierwalt, Occidental College