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ApJS - Reviewer's report on AAS22812

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Fri, Feb 28, 2020 at 12:02 AM

28-Feb-2020

Dr. Eugene A. Magnier
University of Hawaii at Manoa
Institute for Astronomy
[2680 Woodlawn Drive](#)
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Title: The Pan-STARRS1 Database and Data Products

Dear Dr. Magnier,

We have received the reviewer's report on your above submission to The Astrophysical Journal Supplement Series, and is appended below. As you will see, the reviewer thinks highly of your work and has only a few suggestions for relatively minor changes.

When you resubmit the manuscript, please include a cover letter in which you outline in detail the specific changes you have made in response to each of the reviewer's comments.

Click the link below to upload your revised manuscript;

<https://aes.msubmit.net/cgi-bin/main.plex?el=A6KO4CsJ6A7Hlp5J4A9ftd1tMrSxq1TY7CL08u5ZzFXgZ>

Alternatively, you may also log into your account at the EJ Press web site, <http://apj.msubmit.net>. Please use your user's login name: emagnier. You can then ask for a new password via the Unknown/Forgotten Password link if you have forgotten your password.

Reviewers find it helpful if the changes in the text of the manuscript are easily distinguishable from the rest of the text. Therefore we ask you to print changes in bold face. The highlighting can be removed easily after the review.

The AAS Journals have adopted a new policy that manuscript files become inactive, and are considered to have been withdrawn, six months after the most recent reviewer's report is sent to the authors, provided a revised version has not been received by that time.

If you have any questions, feel free to contact me.

Sincerely,
Chris Lintott
University of Oxford
Department of Physics
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Reviewer Report

Reviewer's Comments:

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The Pan-STARRS1 Database and Data Products

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AAS22812

Executive Summary

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This paper, on the whole is well-written, useful, and worthy of Publication in ApJS. However, some minor revisions should be performed before final acceptance. Based on the publication dates of the other Pan-STARRS1 papers listed in the introduction, and on other clues in the paper itself, it appears this paper was originally written c. 2016, and subsequently revised, but additional revisions are needed to bring this paper fully up-to-date.

#### Issues with the substance of the paper

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* Not required, just curious: Is there any special reason why this paper is being submitted so much later than other papers in this set?

* Page 2, 1st paragraph: I understand the definition of a hierarchical database, but that might be apparent to the average reader. A one-sentence definition would be appropriate here. Also, even though the database is hierarchical, it is also still a *relational* SQL database, so that should be mentioned as well.

* Page 2, Section 3: The release dates for DR1 and DR2 are mentioned here. Were the databases available to the public on exactly those dates, or was there any delay? For example, were DR1 *files* released in December 2016, but the database was not ready until later?

* Page 3, 1st line: Not all readers may be familiar with the glob-like notation for sets of tables, e.g. Forced*. It might be useful to explain this notation along with the other typographical conventions listed at the end of Section 1.

* Page 3, Section 4: It would be more appropriate to use https instead of http. In general, given that this paper was likely originally written several years ago, all URLs in the paper should be re-checked for accuracy, and replace http with https wherever that changeover has been made.

* Page 6, Section 5.1.6, last paragraph: Has the reconstruction of difference images been demonstrated and tested? Please provide a reference or give an example in the sample queries appendix.

* Page 10, Section 6.5: Isn't it Simple Object Access? Please provide a reference and/or URL for SOAP.

* Page 19, Section 7.7: I understand the reason for using a number such as -999 instead of the SQL NULL value. However the reference given is to the EDR version of SDSS SkyServer, which was about 20 years ago. There must be a published paper that describes this reasoning by now. Also the SkyServer URL itself may well be invalid at this point, or the quoted text may have changed. Please provide a reference to a published paper. The SkyServer developers can probably assist with that.

* Page 21, Section 8.1.1: What total area of the sky is affected by the polar astrometry problem (a fraction of 3π is acceptable)? This may well be described in Paper IV, but it's worth including a single sentence here.

* Appendix, Table Schema: The authors should detail how they ensure that all the table and column descriptions are accurate. For example, what automation, if any, is used to convert SQL table definitions into these LaTeX tables?

SQL Examples

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These examples are useful. I created a MAST account and ran all of the SQL examples in this section. All of them worked, but I have some suggested revisions.

\* It is not clear from this section which specific context to use. I used DR2.

A particular database context should be explicitly mentioned and some names should be checked for consistency with that context. You could also state that the queries work in both DR1 and DR2, but in that case, expected results should be included for both DR1 and DR2.

\* Example 1: You should state that using COUNT instead of COUNT\_BIG in this example will not simply return an invalid value, but actually throw an arithmetic overflow exception.

\* Example 2: This query returned 3868 rows in DR2, not 3867.

\* Example 4: This query returned 748 objects in DR2, not 747.

\* Example 5: This query returned 1806 objects in DR2, not 1805.

\* Example 9: Most of the objects selected have -999 for gMeanPSFMag. Is this expected?

\* Example 10: The name of the MyDB table implies DR2. Again, choose a specific context or rename to be data-release agnostic.

\* Example 12: Is there a reason the MyDB table name is enclosed in brackets in one example and not the other? Also the '\_PS1' name doesn't seem to be consistent with the apparent DR2 context.

Spelling, Typos, etc.

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These may be taken care of by the editors, but I have noted these to assist revision process.

* In general: Hawaii or Hawai'i?

* In general: Check terms like 'Section', 'Table', 'Figure' (vs. 'Fig') for consistency.

* In general: Spell Sérsic consistently throughout the paper.

* In general: Choose a single notation for RA (RA vs. R.A.).

* Page 1, 1st paragraph: "perform as set of astronomical" -> "as a set".

* Page 2, Table 1: There seem to be several different quotation conventions in the paper, e.g. `Release`. Elsewhere double quotes are used.

* Page 2, Table 1: "Tessellation Type" -> "TessellationType"

* Page 5, Section 5.1.4: in the description of SDSS apertures, double prime (") notation may be more compact than 'arcsec' repeated many times. In general it might be best to settle on a single notation for arcsec, since both notations are used in the paper.

* Page 10: "csv, FITS or xml"; CSV and XML are acronyms just like FITS, so the same typography should be used.

* Page 21, Section 8.1.1: "This issues" -> "This issue".

* Page 22, Section 9: Use official IAU designation for Oumuamua.