

To : Monthly Notices Editorial team
Re : Second Revised version of MN-06-0484-MJ, Lawrence et al
"The UKIRT Infrared Deep Sky Survey (UKIDSS)"

EXPLANATION OF CHANGES

This is in three parts. Part I relates to follow on comments by referee chasing up comments from first report; Part II relates to new suggestions by the referee; and Part III details a number of other minor changes/corrections which we have taken the opportunity to implement.

Part-I : follow-up on comments from first report

*** REFEREE - One last jab...

[issue of vertical axis on Fig.1]

I'm still a bit queasy about this point - but I'm not going to ask the authors to change anything. Source information saturates at some point, say S/N 50-100, so I wouldn't simply equate "resource" with photons collected as is done here. Somehow this has nagged me to the point where I worked through a little calculation....

*** AUTHORS *****

This discussion is getting much too interesting ! It is not at all clear that source information saturates at S/N=50-100 .. but we had better leave it there and accept the opportunity to make no further changes here.

*** REFEREE *****

[section 2.5 GCS confusion issue]

I was concerned about clusters foreground the the Galaxy at low galactic latitude. Presumably it is not a problem.

*** AUTHORS

It is definitely not a problem for GCS. No action needed.

*** REFEREE *****

[treatment of saturated sources]

Right, I was talking about sources above the UKIDSS saturation limit. Will there be a special effort to estimate fluxes for stars above saturation (say from the extended profiles) or will the UKIDSS database incorporate 2MASS catalog sources above the UKIDSS saturation limit (which will vary with seeing and background) so that the database will be complete at bright flux levels.

*** AUTHORS *****

An interesting point, but we do not plan to correct saturated fluxes. A better approach is simply to cross-match the UKIDSS and 2MASS catalogues, which is done in the WSA, so that accurate fluxes for these sources are easily available.

No further action needed we think.

*** REFEREE *****

5. Data Processing

The authors might want to consider adding "validated" to "complete, reliable, and documented..."

Confirmed, yes, by an external authority... exactly... implying that efforts have been made to compare UKIDSS results with existing databases of similar depth (but not areal coverage, of course). Is your photometry consistent with other deep J,H,K surveys? What efforts have been made to make these external checks? Most of the reported SV results are internal - in this case validating against astronomical trends.

*** AUTHORS *****

OK, understood. Such tests are mentioned in section 7 and covered thoroughly in Dye et al. Here in section 5, we still don't like the word "validated" as it implies somebody else holds the truth. We have therefore taken the referee's suggestion, but used the word "tested".

Part-II : Additional comments by referee

*** REFEREE *****

Table 1 is a nice addition. I was somewhat uncertain whether filter half-power points were being quoted or whether total system half-power points were being quoted. The caption says "transmission" as opposed to "filter/system transmission".

*** AUTHORS *****

The half-power points are for total system transmsion. We have now made this clear.

*** REFEREE *****

Maybe simplify Table 2 by eliminating the last three columns and putting that information (which is the same for all surveys) in a Table footnote.

*** AUTHORS *****

We experimented with various changes but didn't find one which used less total space while still getting the information across clearly. We would prefer therefore to leave this as it is.

*** REFEREE *****

Page 5: Paragraph beginning "We are particularly driven,..."
There is a parenthetical comment about halo brown dwarfs in "i)" that seems to be more appropriate for "ii)".

*** AUTHORS *****

Quite so. Done.

*** REFEREE *****

Page 6: Section 2.5 "Our current knowledge of the IMF..." refers to an illustration of the Pleiades IMF. Maybe this can be rephrased that the Pleiades IMF (Fig 3) is representative of our current knowledge of the field IMF...

*** AUTHORS *****

Explanatory re-phrasing added.

*** REFEREE *****

Also, Fig. 3 does not provide units on the vertical axis.
Is this "stars in the cluster per unit logarithmic mass interval"?

*** AUTHORS *****

Units are cluster stars per unit mass - now specified in caption.

*** REFEREE *****

Section 2.6 "This shows that to achieve a sample...."
something is missing from this sentence.

*** AUTHORS *****

Err ? Don't think so. No change made.

*** REFEREE *****

Page 8: "- the WFCAM pixel size of 0.4"... " This
sentence refers to "moderate seeing" and "expected
seeing" without quantifying (approximately) either quantity.

*** AUTHORS *****

moderate seeing specified as >0.8"

*** REFEREE *****

"If the MSB is successfully completed, it is marked...."
implies that there is no grey area -- either a tile passes
and is logged as completed or fails. Is there a middle ground,
for example if seeing is just beyond threshold, where the
MSB is tagged as completed, but could be repeated later
in order to meet the requirements for the particular survey?
That is, with marginal data in hand, does the priority go to
unobserved sky with the hope of replacing that marginal data later?
or does marginal data simply get a "fail".

*** AUTHORS *****

There is a grey area. A sentence describing this has been added.

*** REFEREE *****

Page 9: Write out QC in "For the shallow surveys, the QC process..."

*** AUTHORS *****

Done.

*** REFEREE *****

Page 11: "This depth is good enough to see all of the IMF in quite
distant clusters." Is vague for a couple of reasons.
1) Does "all of the IMF" mean reaching the H-burning limit?
2) Just how distant is "quite distant"?

*** AUTHORS *****

specified "to the H-burning limit"

*** REFEREE *****

"it is the K-band that allows us to see clean through the Galaxy," is a bit of an overgeneralization since there is a significant fraction of the Galactic plane where extinction is so high that even K-band observations do not penetrate for practical applications.

*** AUTHORS *****

Have added "in most directions"

*** REFEREE *****

Page 12: Section 4.6 - "The total magnitude of such objects...but they will significantly extended." First, the word "be" is missing. Second, it would be more interesting if some quantity is assigned to "significantly extended."

*** AUTHORS *****

Word "be" added. Regarding quantification, there is a range of galaxy sizes, so this would take several sentences to justify, which we leave to more detailed papers on the UDS.

*** REFEREE *****

"the legacy value of the survey will obviously be increased by the presence..." "obviously" is one of those words that usually can be cut and improve the sentence.

*** AUTHORS *****

Done.

*** REFEREE *****

Page 16: "preliminary profile fitting... indicate that it is unlikely to produce a major improvement over aperture photometry" is a surprising statement. If the PSF's are well characterized, PSF-fitting should win hands-down over aperture photometry for fainter objects (because of the smaller noise footprint) and in crowded fields. It may just be too early to weigh in on this subject.

*** AUTHORS *****

It may seem surprising, but its true. We have added a sentence stating that this will be explained in the pipeline paper, Irwin et al.

*** REFEREE *****

Page 20: "As well as involving incrementally more data, each release will correspond to a distinct processing history..." I think it is implied here that each release will replace the previously released data with data that has been processed with the latest algorithms, but I could also read the text to say that only the latest increment will come from the latest algorithms while the previous release

will remain static. Maybe a few choice words could
make one interpretation evident.

*** AUTHORS *****

Choice words added.

Part-III : other changes made

* referee thanked in acknowledgements

* Table 4 incorrectly referred to Table 1; has been corrected to refer to Table 3

* Fig 10 caption : "lower panel" changed to "right hand panel" in last sentence

* Section 6.2, para beginning "the right hand panel", added the following :

"The number of photometric outliers can be greatly reduced by using additional quality information in the archive, eg. using source ellipticity to remove binaries which are unresolved in one or two of the passbands. This will be explored fully in a later paper."

* Added DR2 paper Warren et al 2007 to reference list, and added a handful of references to this paper

* Warren et al in prep (sectn 7.3) becomes Warren et al 2007c and is properly added to reference list

* Corrections made to Table 1 and Table 3; design limits for LAS-J and GPS-K were very slightly in error (were revised during survey design stage; now consistent with EDR paper). Also corrected in small number of places in text.

* Fields centres in Table 5 corrected to match Dye et al

* various minor typos and re-phrasings.