Space Warps Collaboration Publication Policy: CFHT-LS

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Abstract

Space Warps was conceived as a strong lens discovery *service*, that any survey science team can make use of (within the logistical constraints). In this document, we define the various types of Space Warps collaboration membership, and their meaning in terms of the Space Warps paper series. This includes guidelines for publications of Space Warps-enabled discoveries. We also discuss the Space Warps data usage policy and outline the first set of Space Warps papers.

As Space Warps was developed based on the requirements of the first Space Warps project, CFHT-LS, the policy for the first project differs from subsequent Space Warps projects involving new data. This document is written specifically for the CFHT-LS project and subsequent projects should refer to the "Guidelines and Policy for Surveys using Space Warps" document.

1 Collaboration Membership Types

The Space Warps website is designed to motivate and enable tens of thousands of people to perform the scientific tasks of strong gravitational lens identification and classification. The Space Warps collaboration comprises the sum total of the volunteers who have logged in and contributed classifications to the project (we would include those who did not log in as well, but we don't know who they are!). This means that the minimal requirement for Space Warps collaboration membership is logging in with a Zooniverse ID and providing some contribution on the site (*i.e.* classifying, or discussing Subjects in Talk[1]).

The collaboration membership is broadly split into four subsets:

Principal Investigators: These are the PIs of the Space Warps project (P. Marshall, A. More and A. Verma)[2]

Zooniverse: Space Warps development team (originally led by A. Kapadia).

[1] Talk (found at talk.spacewarps.org) is a forum for Space Warps collaborators to discuss individual sources and the Space Warps project in general. Bugs can also be reported. This is the direct portal for communication with the Space Warps community.

[2] The PIs may be collectively contacted via the email address spacewarp-spi@googlegroups.com

Science Team: This is a core group of scientists, both citizen and professional, that helped to design, build and test the Space Warps website and the initial CFHT-LS project. The Science Team includes the Space Warps PIs.

Community: All of the volunteers who have contributed classifications to the project[3].

Affiliated: This group includes professional scientists who have made some contribution to the Space Warps project, but smaller than the Science Team. Such contributions might include helping write the initial Citizen Science Alliance proposal, participating in discussions on Talk, writing Space Warps blog posts, advising on the data analysis, or editing papers.

2 The Space Warps Papers

In the following sections we look at the various publications that might arise from the Space Warps project, and suggest reasonable guidelines for deciding on their authorship.

2.1 The Space Warps System Paper Series

We are planning a short series of journal papers describing the Space Warps service, its first dataset (CFHT-LS), and results from its investigation by the collaboration. These results will likely include a sample of new lenses, and some comparison studies between the visual and automated identification of lens systems in this survey. This series will be known as "the Space Warps papers," and each one will have a title that starts with "Space Warps."

The initial papers we are planning to write include (in no particular order, and the actual paper series may be split or change in content and order):

- Space Warps I: The system paper, describing the project, the interface & training scheme, the classification analysis methods (SWAP) and results from classification of the training set. (Marshall et al.)
- Space Warps II: First results from the Space Warps CFHTLS project, including description of CFHT-LS specific information (e.g. data/subjects, generation of simulated images), new lens candidates, and preliminary analysis of Space Warps compared to previous semi-automatic lens searches in this survey. (More et al.)
- Space Warps III: Detailed comparison and analysis of citizen scientist classification versus lens-finding algorithms. (More et al.)
- Space Warps IV: Detailed analysis of candidates from CFHT-LS *including lens models, follow-up etc.* (Verma et al.)
- Space Warps X: Detailed results on lens systems from CFHT-LS (authored by Space Warps collaboration members)

[3]We can only communicate directly with those who have logged in with a Zooniverse ID via Talk or group e-mail.

There maybe further papers written in this series.

2.2 Space Warps Related Papers

These are Space Warps related papers but do not necessarily fall into the Space Warps paper series. Planned examples are:

- Lens modelling in Space Warps with Spaghetti Lens
- New lenses(s) in Space Warps (authored by persons not part of the Space Warps collaboration)

2.3 Additional Space Warps series or related papers

Please email the Space Warps PIs at spacewarpspi@googlegroups.com if you have any ideas for further Space Warps series or related papers.

3 Publication Policy

The authorship policy for Space Warps series and related papers is defined here.

3.1 Journal Papers

A core team of collaborators will participate in writing journal papers, and many collaborators who have made a *significant contribution* to Space Warps will be recognised on the author lists of journal papers presenting Space Warps results. However, not all collaboration members will participate in writing journal papers. *Significant contributions* include those who have contributed to:

- the site design, construction and operation
- data preparation or analysis
- writing and editing the papers.

The current list of Space Warps authors is given in the `authors_core.tex` file and is reprinted in the appendix to this document (see Appendix **??**); this file shown is as it is currently configured, ready to be copied and pasted into the Space Warps system paper (Space Warps I).
The author categories are grouped according to collaboration membership (defined above). Authors have either the status to "opt-out" or "opt-in" on Space Warps publications.
"Opt-out" means the listed people are authors by default on Space Warps series papers and must explicitly state if they wish for their names to be removed from Space Warps publications.
"Opt-in" means the people listed should be invited to comment on and contribute to publications however it is the decision of the lead author whether to add their names based on what they have contributed.

For the CFHT-LS Space Warps system papers, the core team have "opt-out" status, the remainder and the Space Warps Affiliates have "opt-in" status.

The first author of any Space Warps paper will decide, as usual, on the author list of their own paper. This will include adding Affiliates who they think have made a substantial contribution to that investigation, as well as inviting scientists from outside the list of Space Warps authors, or from outside the collaboration. The Space Warps PIs will act as adjudicators if any disputes arise, but to be honest we are not expecting any.

Lead authors of Space Warps papers should circulate drafts to the list of authors (and whoever they wish from the affiliates list) and allow a minimum of two weeks to give time for comments. If "opt-in" authors have not provided comments within this time frame they will not be included as authors on the paper. If "opt-out" authors have not responded to ask for their names to be removed they will be kept on the author list.

For Space Warps related papers, the Space Warps PIs should be contacted via spacewarpspi@googlegroups.com for a suggested minimum contingent of collaboration authors to be added to the paper, but the "opt-out" authors defined in `authors_core.tex` should be included as a minimum.

3.2 Zooniverse Publications: Letters and Talk

Any Space Warps collaboration member, simply by virtue of their Zooniverse registration, may write a Zooniverse Letter[4] describing their investigation of any lens candidate they find in Space Warps. This, along with posts in Talk, are the primary means by which we expect collaboration members will communicate their findings to the rest of the astronomical community. The Space Warps Zooniverse Letters will contribute to the collective knowledge and understanding of the presented system(s). Zooniverse Letters are citable objects, and in some cases will appear listed on ADS.[5] We strongly encourage community members to write Zooniverse Letters about their findings. We would be happy to help any member wishing to do this, please just drop us a line at spacewarpspi@googlegroups.com.

As Space Warps classifications are a community wide activity, it is impossible to attribute the discovery of a candidate to a single community member, or group of members. Therefore, in recognition of their contribution to the Space Warps project, all Space Warps community members will be listed (on their approval) on the Space Warps members web page (URL: to be added). This web page will be linked to in the acknowledgements of every ensuing Space Warps publication. If a community member makes a significant contribution e.g. in the further investigation of a lens candidate with modelling tools, they are strongly encouraged to write Zooniverse Letters (see Section **??**). This may lead to them being invited to join journal publications by the lead author.

4 Publication Guidelines

Any Space Warps series and Space Warps enabled discovery papers should include

- citations to the Space Warps system papers, Space Warps I & II

[4] `http://letters.zooniverse.org`
[5] To be confirmed.

- the collaboration should be acknowledged in the acknowledgement section with a link to the collaboration membership page (URL: to be added).
- Space Warps CFHT-LS is based on data processed by CFHT-LS and Terapix, so please add the following acknowledgement to your paper:
  "Based on observations obtained with MegaPrime/MegaCam, a joint project of CFHT and CEA/IRFU, at the Canada-France-Hawaii Telescope (CFHT) which is operated by the National Research Council (NRC) of Canada, the Institut National des Science de l'Univers of the Centre National de la Recherche Scientifique (CNRS) of France, and the University of Hawaii. This work is based in part on data products produced at Terapix available at the Canadian Astronomy Data Centre as part of the Canada-France-Hawaii Telescope Legacy Survey, a collaborative project of NRC and CNRS."
  from http://www.cfht.hawaii.edu/Science/CFHLS/cfhtlspublitext.html

A Current Author List for Space Warps series papers:

```
% The \SW Collaboration includes:
% listed by opt-out and opt-in status then by
% category, ordered alphabetically within each category
% **NOTE**: the order of this list does not need to be preserved in \sw papers

%-------------------------------------------------------------------------------
% OPT-OUT default authors unless request otherwise
% drafts must be circulated to these authors
% order does not need to be preserved
%
   \newauthor{%

% PIs (opt-out):
    Phil~Marshall,$^{1}$\thanks{\pjmemail}
    Anupreeta More,$^{2}$
    Aprajita Verma,$^{1}$

% Zooniverse (opt-out):
    Amit Kapadia,$^{3}$
    Chris Snyder,$^{3}$}
    Michael Parrish,$^{3}$

% Science Team (opt-out):
    Elisabeth Baeten,
    Claude Cornen,
    Christine Macmillan,
    Julianne Wilcox,
}

%-------------------------------------------------------------------------------
% OPT-IN lead authors can invite the following to join the author list
% these authors should receive a copy of the paper and be invited to contribute with comments
%
```

```
% Zooniverse (opt-in):
   \newauthor{%
    Kelly Borden,$^{3}$
    Chris Lintott,$^{1}$
    David Miller,$^{3}$
    Edward Paget,$^{3}$
    Robert Simpson,$^{1}$
    Arfon Smith,$^{3}$
    }

% Science Team (opt-in):
   \newauthor{%
    Thomas Jennings,
    Rafael Kueng,$^{5}$
    Surhud More,$^{2}$
    Prasenjit Saha,$^{5}$
    Matthias Tecza,$^{1}$
    Layne Wright
    }

%-------------------------------------------------------------------------------
% Affliates:
% OPT-IN lead authors can circulate the drafts to whichever of the affiliates listed below they wish
% Depending on their contribution, lead authors can add them to the author list

% Affiliates (opt-in)
   \newauthor{%
    % Cecile Faure,
    % Stuart Lowe,
    % Thomas Collett$^{?}$,
    % Jean-Paul Kneib$^{4}$,
    % Clecio de Bom$^{?}$,
    % Richard Bower^{?}$,
    % Liz Buckley-Geer^{?}$,
    % Jonathan Coles^{?}$,
    % Jim Geach^{?}$,
    % Mandeep S. S. Gill$^{?}$,
    % Martin Makler$^{?}$,
    % David Murphy$^{?}$,
    % Mark Swinbank^{?}$,
    % Douglas Tucker$^{?}$,
    % John Wallin$^{?}$,
    }
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$^2$\ipmu\\
$^3$\adler\\
$^4$\lausanne\\
$^5$\zurich
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