The Unified Astronomy Thesaurus (UAT)
A consensus thesaurus for astronomy

Norman Gray[1], Alberto Accomazzi[2], Christopher Erdmann[2], Chris Biemesderfer[3], Justin Soles[4], Katie Frey[2]

[1]University of Glasgow, UK, [2]Harvard-Smithsonian Center for Astrophysics, USA, [3]American Astronomical Society, USA, [4]McGill University, Canada

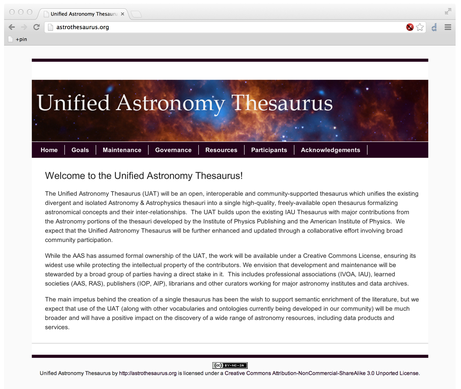
Overview

The Unified Astronomy Thesaurus (UAT) will be an open, interoperable and community-supported thesaurus which unifies the existing divergent and isolated Astronomy & Astrophysics thesauri into a single high-quality, freely-available open thesaurus formalizing astronomical concepts and their inter-relationships. The UAT builds upon the existing IAU Thesaurus (see 'Origins'). We expect that the Unified Astronomy Thesaurus will be further enhanced and updated through a collaborative effort involving broad community participation.

The UAT's main goals are to be:

- **open**: anyone in the community can contribute by suggesting additions, refinements and revisions – the thesaurus itself will be released under a CC-BY-SA Creative Commons licence;
- **interoperable**: the thesaurus is in a standard format;
- **community-supported**: the UAT is already supported by major stakeholders in the astronomical community (including journal publishers and professional societies like the IAU, AIP, IoP and AAS).

The current draft release is a polyhierarchy with 2305 terms, 15 top concepts, and with the majority of the terms 2–4 levels down from the top. There are 224 'related' links in the thesaurus



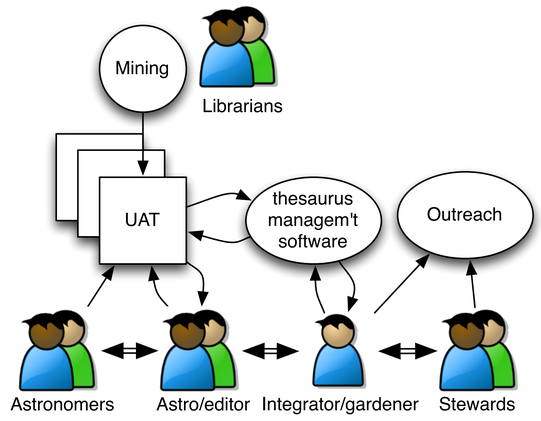

```
<http://purl.org/astronomy/uat>
  a skos:ConceptScheme;
  dc:description """The Unified Astronomy Thesaurus (UAT)
    is an open, interoperable and community-supported
    thesaurus which unifies the existing A&A thesauri""";
  dc:rightsHolder [ foaf:name "American Astronomical Society" ];
  dc:created "2012-12-17".

:T105
  skos:prefLabel "Astrophysical magnetism"@en;
  a skos:Concept;
  skos:narrower :T1011, :T1547, :T333, :T472.

:T1064
  skos:prefLabel "Methods and techniques"@en;
```

Potential/expected uses

The main driver behind the creation of a single thesaurus is the wish to support **semantic enrichment of the literature**, but we anticipate broader use of the UAT (amongst other vocabularies) in data and service discovery applications, and that the UAT will underpin and inspire a new range of cross-silo data-sharing applications.

Origins

The UAT is equivalent to the astronomy section of the all-physics thesauri commercially developed for the American Institute of Physics and the Institute of Physics and donated by them to the AAS. This is ultimately based on the 1992 IAU Thesaurus of Shobbrook and Shobbrook, with subsequent additions from Helen Knudsen, Marlene Cummins and Liz Bryson, influence from the consensus list of journal keywords, and, in the late-2000s, updating work by Rick Hessman under the auspices of the IVOA.



The UAT needs you!

Astronomy and astrophysics are fast-changing fields, with continual churn in their technical vocabulary – for example, neither 'dark energy' nor 'exoplanets' appear in the 1992 IAU thesaurus. ADS must respect this rolling change in the course of its mission to make available the discipline's literature, and the existence of an available and trusted vocabulary will enable other semantically-enhanced applications.

On the grounds that the best source of new vocabulary is the community itself, we intend to provide a web interface that will not only allow the UAT to be browsed, but also allow anyone to identify and suggest additions, changes and improvements to terms within the UAT. These suggestions will be filtered through **volunteer editors (astronomers or subject matter experts)** and enter the UAT with credit to the contributor and editor. Periodically, a librarian will review and tune the overall structure before re-releasing it, allowing the volunteer editors to focus solely on reviewing the suggestions made by users.

The involvement of the astronomical community – with the development work led by CfA/ADS – will help the UAT remain an up-to-date, accurate and trusted resource for the community as a whole.

Get the thesaurus

You can find more information about the UAT project at `http://astrothesaurus.org/`.

The thesaurus is currently in 'closed beta', while we finalise how the work will be managed and distributed (this will include a SKOS thesaurus). To express your interest in contributing to the UAT or using the UAT for development purposes, join the google group `https://groups.google.com/d/forum/uat-users`

Contacts: Norman Gray `norman@astro.gla.ac.uk`, Alberto Accomazzi `aaccomazzi@cfa.harvard.edu`, Christopher Erdmann `cerdmann@cfa.harvard.edu`, Chris Biemesderfer `Chris.Biemesderfer@aas.org`, Justin Soles `justin.soles@mail.mcgill.ca` and Katie Frey `kfrey@cfa.harvard.edu`.