

UAT 3.0

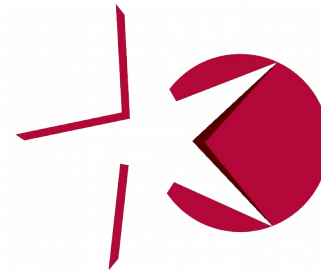
Unified Astronomy Thesaurus

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K. Frey
& UAT steering committee

**UNIFIED
ASTRONOMY
THESAURUS**



IVOA Interoperability meeting - Paris
May 16, 2019



□ UAT : Unified Astronomy Thesaurus

- <http://astrothesaurus.org/> 2018ApJS..236...24F
- Presented in previous interop meetings
 - [A. Accomazzi's presentation](#) (10/2016)
 - [UAT and VizieR](#) (05/2018)
- Version 3.0.0 released in September 2018
- IVOA :Recommended terms for <subject> from VOResource 1.1

SEPTEMBER 21, 2018 BY KATIE FREY

Version 3.0.0 is available now!

Version 3.0.0 of the Unified Astronomy Thesaurus

The latest version of the UAT has been released! Version 3.0.0 brings many changes and updates to the Unified Astronomy Thesaurus.

Element subject
Type

Meaning

source.

string: as:token

a topic, object type, or other descriptive keywords about the re-
Occurrence required; multiple occurrences allowed.

Comment Terms for Subject should be drawn from the Unified Astronomy Thesaurus (<http://astrothesaurus.org>).

UAT and AAS Integration



Starting on June 3rd,
articles submitted to the AAS journals
will be categorized using concepts
from the Unified Astronomy Thesaurus.

UAT and AAS Integration



ASTROPHYSICAL
JOURNAL LETTERS

ASTRONOMICAL
JOURNAL

ASTROPHYSICAL
JOURNAL

ASTROPHYSICAL JOURNAL
SUPPLEMENT SERIES

RESEARCH
NOTES

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AAS Journals Will Start Using New Keywords on June 3rd



8 May 2019

Starting Monday, June 3rd, the AAS journals will start categorizing articles using concepts from the [Unified Astronomy Thesaurus](#) (UAT), replacing the venerable subject keywords system. Read on to learn what this change means for you!

Why is this changing?

The simplest answer to this question is that the current list of keywords is very old. Its original structure was developed in the 1970s and the list hasn't been revised since 2013. For well-established fields, the status quo has been OK, but for disciplines like laboratory astrophysics the current categories have been woefully inadequate. The UAT closes many gaps in the old keywords, and will be maintained more regularly going forward.

The other important reason to switch to the UAT is that the broader community has agreed to adopt it as a standard. This means that not only the AAS journals, but also other astronomical journals, services like [NASA ADS](#), national observatories, and scientific data centers all plan to use the UAT when categorizing astronomical content. With everyone using the same system, we hope that you'll find that the categorizations you choose suddenly start feeling much more

Editorial News



New Scientific Software Editor

We are delighted to announce the appointment of Dr. Steve Crawford as the second software editor for the AAS Journals. Read more [here](#).

What about the Keywords?



- Current list of keywords...
 - originally developed in the 1970s
 - hasn't been updated since 2013
 - sufficient for well established fields, but
 - inadequate for newer disciplines
 - shallow list, not machine readable
- The Unified Astronomy Thesaurus..
 - maintained by information professionals
 - owned and supported by AAS
 - updated yearly, with community input
 - expressed in a modern, machine readable format
 - suitable for use on a variety of platforms

fast novae

Magnetars

Comets

S-process

CMBR detectors

Nuclear abundances

Sunspot cycle

Solar coronal holes

Cosmic abundance

Ephemerides

Mass spectrometers

Hydroxyl masers

Galaxy dynamics

Recurrent novae

Bipolar sunspot groups

Radio loud quasars

Astrodynamics

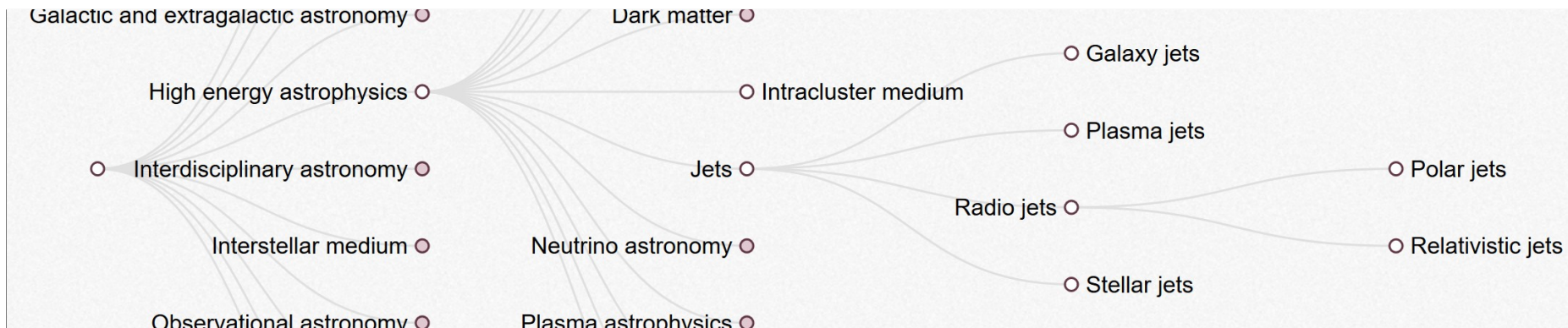
Stellar nucleosynthesis

Radio observatories

Unified Astronomy Thesaurus



- hierarchical structure
 - 2050 concepts
 - 11 top level categories
 - depth of 11 levels
 - most concepts 4 or 5 levels deep
- “related term” links
 - solar vs stellar concepts
- standard linked data format
 - machine readable
 - SKOS RDF/XML



UAT Concept Selector



SELECT UAT CONCEPTS

AAS uses the [Unified Astronomy Thesaurus \(UAT\)](#) to define keywords. Please use the entry box and drop down menu below to auto-complete, search for, and obtain UAT concepts for your manuscript submission to AAS Publishing (*The Astronomical Journal*, *The Astrophysical Journal*, *The Astrophysical Journal Letters*, *The Astrophysical Journal Supplements*, *Research Notes of the AAS*):

Added Concepts	
Stellar flares (1603)	Remove ✖
<input type="text" value="Stellar flare"/>	

Cut/Paste Text

Concept: Stellar flares +

More General Concepts:

Stellar phenomena +

More Specific Concepts:

Disk flaring +

Optical flares +

Stellar x-ray flares +

Related Concepts:

Solar flares +

Start typing a concept here, the tool will attempt to autocomplete

This [UAT Concept Selector widget](#) was donated by eJournalPress to the American Astronomical Society. Licensed under the MIT License.

<http://astrothesaurus.org/concept-select/>

Where Can I Learn More?



- the UAT website → <http://astrothesaurus.org>
- the UAT's GitHub organization → <https://github.com/astrothesaurus/>
- its [API](#), and more! We particularly want to emphasize that the UAT is a living project — [your contributions are most welcome](#). In particular, if you feel that a concept is missing, please suggest its addition to the next version of the UAT by [filing an issue on GitHub](#)!

□ VizieR keywords in Registry

- The VizieR keywords are used in the VOResource <subject> elements

`ivo://CDS.VizieR/J/A+A/289/740 1994A&A...289..740K`

Key words: stars: abundances, early type – Galaxy: abundances, evolution

Journal

ADC_Keywords: Stars, B-type; Spectroscopy; Abundances

Keywords: stars: abundances, early type - Galaxy: abundances, evolution

ReadMe

<content>

<subject>Abundances</subject>

<subject>Spectroscopy</subject>

<subject>Stars: early-type</subject>

Registry

- Pro : homogeneous description across all resources
- Con : limited vocabulary

□ <subject> in the Registry

```
SELECT res_subject,  
COUNT(res_subject) AS nb  
FROM rr.res_subject  
WHERE ivo_id NOT LIKE 'ivo://cds.vizier%'  
GROUP BY res_subject  
ORDER BY nb DESC
```

Catalogs	122
extragalactic survey	101
Virtual Observatory	95
Star	89
Surveys	78
surveys	78
Observation	74
Stars	66
Virtual observatory	59
all sky survey	59
Galaxy	56
Galaxies	48
ADQL	43
Authority	42
Tutorials	40
Astrometry	37
virtual observatory	32
Registry	32
Infrared Astronomy	32
GRB	31
star formation	27
Milky Way disk	26
AGN	26
OpenSkyNode	23
Small Magellanic Cloud	19
Infrared, survey, galaxy, point source	19
Large Magellanic Cloud	18
Planets	18
spectroscopy	18
Cosmology	17
Images	17
Stars: Proper Motions	16
optical astronomy	16
high redshift galaxies	15
Cluster of Galaxies	15
sky survey	15
Variable stars	15
Exoplanets	14
galaxies	14
Jupiter	14
Nebulae	14
Magellanic clouds	14

□ <subject> in the Registry

- UAT concepts (id)

Virtual observatories (1774)

Gamma-ray bursts (629)

Milky Way disk (1050)

Proper motions (1295)

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□ Conclusions & perspectives

- UAT 3.0 will soon replace AAS keywords
- How do we improve usage in the Registry ?
 - Use autocomplete widget in submission forms
 - Curation of existing records ?
- Mapping keywords can be a good starting point...
- ... but native usage of UAT concepts is better !

- Towards standardized keywords search in journals & VO !