Unified Astronomy Thesaurus

Katie Frey
kfrey@cfa.harvard.edu
LISA VIII
June 9, 2017
Why a Thesaurus?

- if something doesn’t have a label, you can’t talk about it
- different perspectives lead to different labels

Garfield, April 15 1985
Why a Thesaurus?

- the organization of labels drives understanding
Why a Thesaurus?

- consistent set of keywords
- articles, datasets, proposals, manuscripts, conferences, software, etc
- filtering results
- publishers and institutions
- SAO/NASA Astrophysics Data System
What about the Keywords?

- several efforts to build keyword lists in the past, including...
  - IAU Thesaurus (Shobbrook & Shobbrook), last updated in 1995
  - IVOA Thesaurus (Hessman), last updated in 2009
  - Physics and Astronomy Classification Scheme (AIP), retired in 2010
  - Astronomy Subject Headings (astro journals), last updated in 2013

- flat lists or perhaps a shallow categories

- simple text lists, not machine readable

- out of date or retired
Beginning of the UAT

- merger of the astronomy portions of the IoP and AIP keyword lists
- other vocabularies were integrated
- donated to the AAS
Major Updates to the UAT

- reorganized the UAT to be in line with the IAU divisions
- subject experts from various institutions reviewed and contributed
- large structural changes, removed ~300 terms, added ~200
- feedback tools developed
Unified Astronomy Thesaurus

- hierarchical structure
  - 11 top level categories
  - depth of 10 levels
  - most concepts 4 or 5 levels deep
Unified Astronomy Thesaurus

- Hierarchical structure
  - 11 top level categories
  - Depth of 10 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 v.2.0.0

Unified Astronomy Thesaurus v.2.0.0 Release Notes

Version 2.0.0 of the Unified Astronomy Thesaurus consists of a polyhierarchy with 1843 concepts, 11 top concepts, a depth of 10 levels, with 320 related concept links.

Release Date: 1/31/2017
UAT Sorting Tool

http://uat.altbibl.io/sort/
UAT Sorting Tool

Choose a branch of the UAT (v2.0.0)*:
--Exoplanet astronomy

Add Concept: [Add Node]

Send Your Feedback

Changes made using the sorting tool will be automatically included in your feedback when you submit this form.

Your Name: [ ]

Diagram:
- Exoplanet detection methods
- Exoplanet dynamics
- Exoplanet evolution
- Exoplanet formation
- orphans
- Exoplanet structure
- Exoplanet systems
UAT Sorting Tool

Choose a branch of the UAT (v2.0.0)*:

--Exoplanet astronomy

Add Concept:

Add Node

Send Your Feedback

Changes made using the sorting tool will be automatically included in your feedback when you submit this form.

Your Name:
UAT Sorting Tool

Send Your Feedback

Changes made using the sorting tool will be automatically included in your feedback when you submit this form.

Your Name: Katie Frey
Your Institution: CfA
Your Email: kfrey@cfa.harvard.edu

Additional Notes/Comments:
I also think you need to add a section about life on the Moon. ;)

Robot Check*:
Enter This Code >> 26853
26853

Submit
*Required
UAT Sorting Tool

Send Your Feedback

Changes made using automatically included when you submit this.

Your Name: K
Your Institution: C
Your Email: k

Additional Notes/Comments:
I also think you should add a section about life on the Moon.

Robot Check*:
Enter This Code >> 26853

Submit
*Required

Suggestions from Sorting Tool

uat@altbibli.io

8:12 AM (3 minutes ago) ☆

to me ▼

Name: Katie Frey
Institution: CfA
Email: kfrey@cfa.harvard.edu
Notes: I think we need to add a section about life on the Moon.

Difference File:
- Natural satellites NT The Moon
- Jovian satellites NT Galilean satellites
+ Orphans NT Galilean satellites
+ Oort cloud NT The Moon
+ Inner planets NT Vulcan
+ Vulcan

Exoplanet systems

Exoplanet plate tectonics

Exoplanet formation
Tracking Contributions

- non-ASCII characters in UAT and a mc
- Discrepancy between Excel & RDF for
  Hi Katie, I don’t have any experience
- [uat-users] Astrochemistry and Molecule
  Further to the topic of atomic and mc
- Re: UAT Hierarchy beta 002.xls
  Hi Katie, thanks for the revised UAT!
- [uat-users] UAT Excel file
  Hello everyone, If you have been loo
- [uat-users] comments on UAT Beta_v2
  Hi Katie, your email with the commer

> *Astronomical objects*  "Emission line objects"  "Astrophysical masers"
> *Astronomical objects*  "Emission line objects"  "Astrophysical masers"  "Hydroxyl masers"
> *Astronomical objects*  "Emission line objects"  "Astrophysical masers"  "Silicon monoxide masers"
> *Astronomical objects*  "Emission line objects"  "Astrophysical masers"  "Water masers"
  You’ll want to include Megamasers
> *Astronomical objects*  "Emission line objects"  "Emission line galaxies"  "Markarian galaxies"
> *Astronomical objects*  "Emission line objects"  "Emission line galaxies"  "Seyfert nuclei"
  Why galaxies vs. nuclei ...? Better "Seyfert galaxies"
> *Astronomical objects*  "Galaxies"  "Active galaxies"  "Active galactic nuclei"  "Quasars"
> *Astronomical objects*  "Galaxies"  "Active galaxies"  "Active galactic nuclei"  "Quasars"  "Double quasars"
> *Astronomical objects*  "Galaxies"  "Active galaxies"  "Active galactic nuclei"  "Quasars"  "Individual quasars"
> *Astronomical objects*  "Galaxies"  "Active galaxies"  "Active galactic nuclei"  "Quasars"  "Quasar-galaxy pairs"
> *Astronomical objects*  "Galaxies"  "Active galaxies"  "Active galactic nuclei"  "Quasars"  "Radio quiet quasars"
  need to add "Radio loud quasars" The term quasars was
  reserved for such radio-loud objects

- emails...
Tracking Contributions

- emails...

- ...quickly got out of hand

- "Astronomical objects" "Emission line objects" "Astrophysical masers"
- "Astronomical objects" "Emission line objects" "Astrophysical masers" "Hydroxyl masers"
- "Astronomical objects" "Emission line objects" "Astrophysical masers" "Silicon monoxide masers"
- "Astronomical objects" "Emission line objects" "Astrophysical masers" "Water masers"
  - You'll want to include Megamasers
- "Astronomical objects" "Emission line objects" "Emission line galaxies" "Markarian galaxies"
- "Astronomical objects" "Emission line objects" "Emission line galaxies" "Seyfert nuclei"
  - Why galaxies vs. nuclei ...? Better "Seyfert galaxies"
- "Astronomical objects" "Galaxies" "Active galaxies" "Active galactic nuclei" "Quasars"
- "Astronomical objects" "Galaxies" "Active galaxies" "Active galactic nuclei" "Quasars" "Double quasars"
- "Astronomical objects" "Galaxies" "Active galaxies" "Active galactic nuclei" "Quasars" "Individual quasars"
- "Astronomical objects" "Galaxies" "Active galaxies" "Active galactic nuclei" "Quasars" "Quasar-galaxy pairs"
- "Astronomical objects" "Galaxies" "Active galaxies" "Active galactic nuclei" "Quasars" "Radio quiet quasars"
  - need to add "Radio loud quasars" The term quasars was reserved for such radio-loud objects
## Tracking Contributions

<table>
<thead>
<tr>
<th>Issue</th>
<th>Title</th>
<th>Author</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>#100</td>
<td>Rename concept: Beta Cephei stars</td>
<td>kateepley</td>
<td>1 day ago</td>
</tr>
<tr>
<td>#99</td>
<td>Cleaning up &quot;Variable Stars,&quot; submitted by Sarah Weissman (STScI)</td>
<td>kateepley</td>
<td>20 Mar 2016</td>
</tr>
<tr>
<td>#98</td>
<td>Merge concepts: Raido continuum emission</td>
<td>kateepley</td>
<td>19 Mar 2016</td>
</tr>
<tr>
<td>#97</td>
<td>Modify concept: Gamma rays</td>
<td>kateepley</td>
<td>18 Mar 2016</td>
</tr>
<tr>
<td>#96</td>
<td>Merge concepts: Gamma-ray telescopes</td>
<td>kateepley</td>
<td>18 Mar 2016</td>
</tr>
<tr>
<td>#95</td>
<td>New thesaurus concept suggestion: Solar analog</td>
<td>kateepley</td>
<td>3 Mar 2016</td>
</tr>
<tr>
<td>#94</td>
<td>New thesaurus concept suggestion: Adaptive optics</td>
<td>kateepley</td>
<td>3 Mar 2016</td>
</tr>
</tbody>
</table>
## Tracking Contributions

- Public
- Multiple people can comment
- History of when, why, and how a concept was changed
- Collect issues and link to a release

### Example Issues

<table>
<thead>
<tr>
<th>Issue #</th>
<th>Title</th>
<th>Status</th>
<th>Author</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>#100</td>
<td>Rename concept: Beta Cephi stars</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Beta Cephi stars</td>
</tr>
<tr>
<td>#99</td>
<td>Cleaning up &quot;Variable Stars,&quot; submitted by Sarah Weissman (STScI) 12/16/2016</td>
<td>Open</td>
<td>kateefrey</td>
<td>Fixed a typo in the &quot;Variable Stars&quot; documentation</td>
</tr>
<tr>
<td>#98</td>
<td>Merge concepts: Raido continuum emission</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Raído continuum emission</td>
</tr>
<tr>
<td>#97</td>
<td>Modify concept: Gamma rays</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Gamma rays</td>
</tr>
<tr>
<td>#96</td>
<td>Merge concepts: Gamma-ray telescopes</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Gamma-ray telescopes</td>
</tr>
<tr>
<td>#95</td>
<td>New thesaurus concept suggestion: Solar analog</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Solar analog</td>
</tr>
<tr>
<td>#94</td>
<td>New thesaurus concept suggestion: Adaptive optics</td>
<td>Open</td>
<td>kateefrey</td>
<td>Added a new concept related to Adaptive optics</td>
</tr>
</tbody>
</table>
Add Concept: Transients, submitted by Sarah Weissman (STScI) 8/8/2016 #11

Closed   katieefrey opened this issue on Nov 2, 2016 - 5 comments

katieefrey commented on Nov 2, 2016 • edited

Added category for transients - X-ray source means something that is always there. A transient wouldn't be seen except for a brief period of time where it goes off and then you don't see it anymore. These were in APT but not in UAT.

- High energy astrophysics --> Transients --> Gamma Ray bursters
- High energy astrophysics --> Transients --> Gamma Ray transients
- High energy astrophysics --> Transients --> UV transients
- High energy astrophysics --> Transients --> X-ray transients
- High energy astrophysics --> X-ray transients

katieefrey commented on Nov 2, 2016

Does "Transients" have enough intrinsic context, or should the term be "Transient astronomical events"?

Similar comments re: "X-ray transients" --> "X-ray transient events"?

katieefrey self-assigned this on Nov 2, 2016

katieefrey added the add concept label on Nov 18, 2016
Tracking Contributions

Add Concept: Transient (STScI) 8/8/2016 #11

katieefrey opened this issue on Nov 2, 2016

katieefrey commented on Nov 2, 2016

Added category for transients - X-ray sources seen except for a brief period of time with APT but not in UAT.

High energy astrophysics --> Transients
High energy astrophysics --> Transients
High energy astrophysics --> Transients
High energy astrophysics --> Transients
High energy astrophysics --> Transients

jrhastro commented on Dec 19, 2016

Yes, I think “transient source” would be the preferred term.

riwastros commented on Dec 19, 2016

Yep, I agree too -- “transient source” is correct.

On Dec 19, 2016, at 1:18 PM, Jonathan Hargis <notifications@github.com> wrote:

Yes, I think “transient source” would be the preferred term.

You are receiving this because you were mentioned.
Reply to this email directly, view it on GitHub #11 (comment), or mute the thread https://github.com/notifications/unsubscribe-auth/ACn-aY17R_zdMrnxVnh8HJ-eQKt5naBoksSrspPgaipZM4KrhH0.
Tracking Contributions

Add Concept: Transient
(STScI) 8/8/2016 #11

Closed  katieefrey opened this issue on Nov 2

katieefrey commented on Nov 2

Added category for transients - X-ray sources seen except for a brief period of high energy astrophysics --> Transient sources --> Gamma Ray bursters
High energy astrophysics --> Transient sources --> Gamma Ray transit sources
High energy astrophysics --> Transient sources --> UV transient sources
High energy astrophysics --> Transient sources --> X-ray transient sources
High energy astrophysics --> Transient sources

katieefrey commented on Mar 20

These updates will be included in next release.

High energy astrophysics --> Transient sources --> Gamma Ray bursters
High energy astrophysics --> Transient sources --> Gamma Ray transit sources
High energy astrophysics --> Transient sources --> UV transient sources
High energy astrophysics --> Transient sources --> X-ray transient sources
High energy astrophysics --> Transient sources

katieefrey commented on Nov 2

Does “Transients” have enough individual sources?
Similar comments re: “X-ray transients”

katieefrey self-assigned this on

katieefrey added the add concept

Owner

katieefrey closed this on Mar 20

You are receiving this because you were mentioned.
Reply to this email directly, view it on GitHub <#11 (comment)>, or mute the thread <https://github.com/notifications/unsubscribe-auth/ACn-aY17R_zdMrnxXmh8IU-eQKktnaBojk5SrzspQgaipZM4Kthh0>. 

Owner
Future of the UAT

- connect Sorting Tool to GitHub
- encourage astronomers, librarians, etc, to join the conversation on existing issues
- group issues into smaller batches for focus groups
Future of the UAT

- additional updates (data formats, astronomical modeling, software types)
- expansion (instrumentation taxonomy, connecting with other projects)
- improvements (multilingual and definitions)
Thank you!

Katie Frey
@katieefrey
kfrey@cfa.harvard.edu
http://astrothesaurus.org