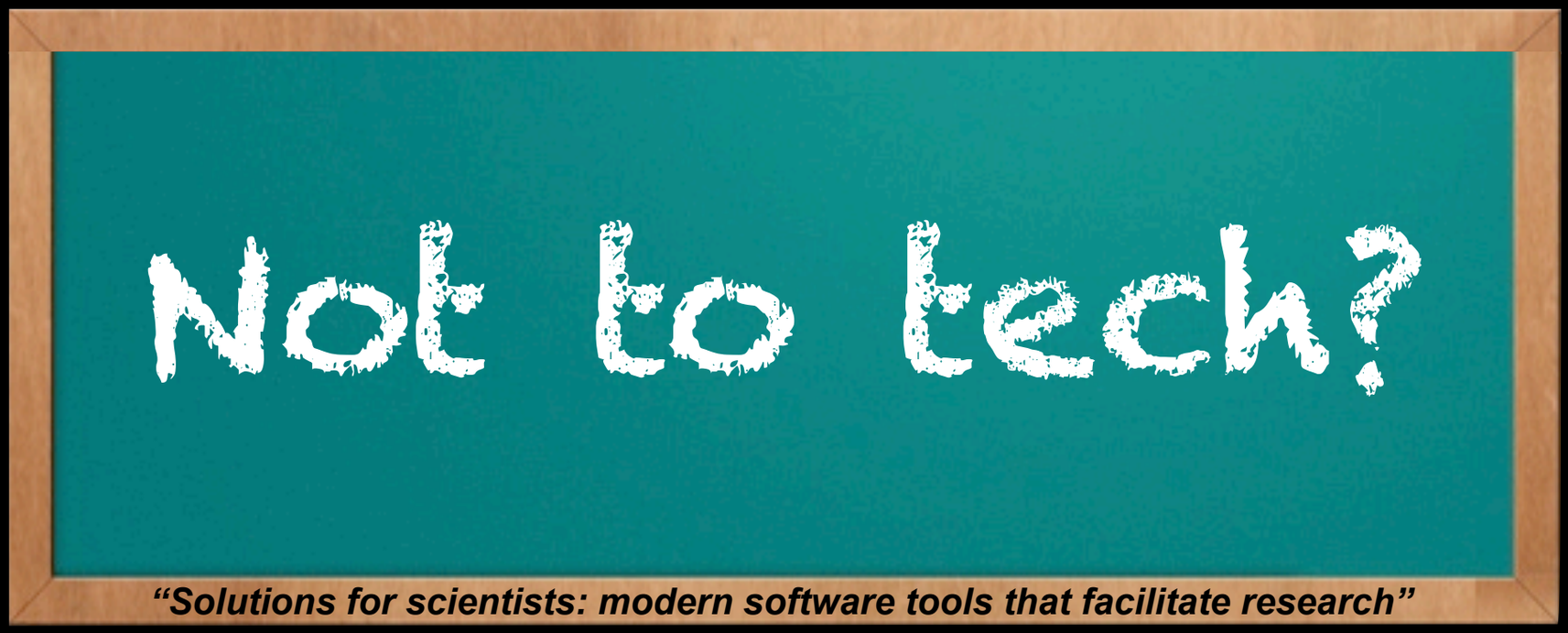
2tech, or



Alyssa Goodman

Harvard-Smithsonian Center for Astrophysics

*Rel**ative*** Strengths

Pattern Recognition

Creativity

Calculations

“Solutions for scientists:
modern software tools that facilitate research.”

Not what I want to talk about today...

Microsoft Research

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Project Tuva Enhanced Video Player
Watch the Feynman Lectures

> Events > 2011 eScience Workshop: Transforming Scholarly Communication

2011 eScience Workshop: Transforming Scholarly Communication

October 23–25, 2011 | Cambridge, Massachusetts

Home | Agenda

Microsoft Research and Harvard University are sponsoring the *invitation-only* Microsoft Research eScience Workshop: Transforming Scholarly Communication from October 23 to 25, 2011, at the Microsoft Northeast Research and Development Center in Cambridge, Massachusetts. The workshop—co-sponsored in close collaboration with the

Microsoft Research Northeast Research and Development Center

...he adoption of new ...search in the ...st in new forms of ...articipants transition ...ustainably.

...art"

...ving

Related Website

- tumbler Site

Registration

This eScience Workshop is an invitation-only event. If you have been invited:

- Register now

Related Links

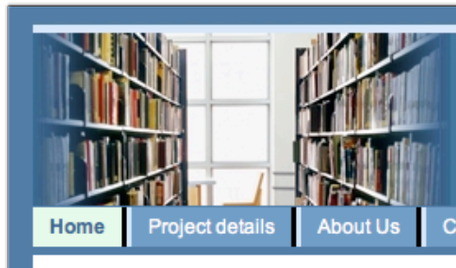
- Jim Gray eScience Award
- eScience at Microsoft
- eScience Group
- *The Fourth Paradigm*

Related Events

- IEEE International Conference on e-Science
- 2011 eScience in Action Workshop
- eScience Workshop 2010

Contact Us

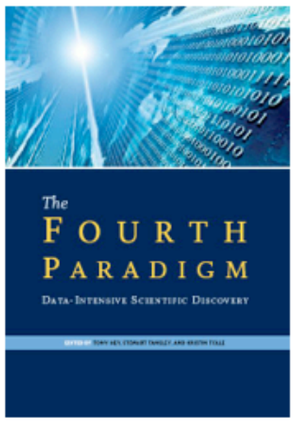
For more information, contact esci@microsoft.com



Community Model for Data-Intensive Research

Home | Project details | About Us | Contact Us | Site Map | Member Login

Community Capability Model for Data-Intensive Research



Microsoft Research Connections and UKOLN are working in partnership on an exciting new project to develop a Community Capability Model for Data-Intensive Research, building upon the principles described in *The Fourth Paradigm*. This second consultation workshop will focus on discussing and describing scholarly communications to enable data-intensive research, such as collaborative authoring platforms, common data formats and identifiers, data-sharing, data citation and socio-legal issues.
The ultimate aim is to provide a framework that is useful for researchers and funders in modelling a range of disciplinary and community behaviours with respect to the adoption, usage, development and exploitation of cyber-infrastructure for data-intensive research.

Find out more on the project details page.

UKOLN

UNIVERSITY OF BATH

Microsoft Research Connections

Events

UK e-Science All Hands Meeting, 27-29 September 2011, York, UK [Sept. 28 workshop agenda]

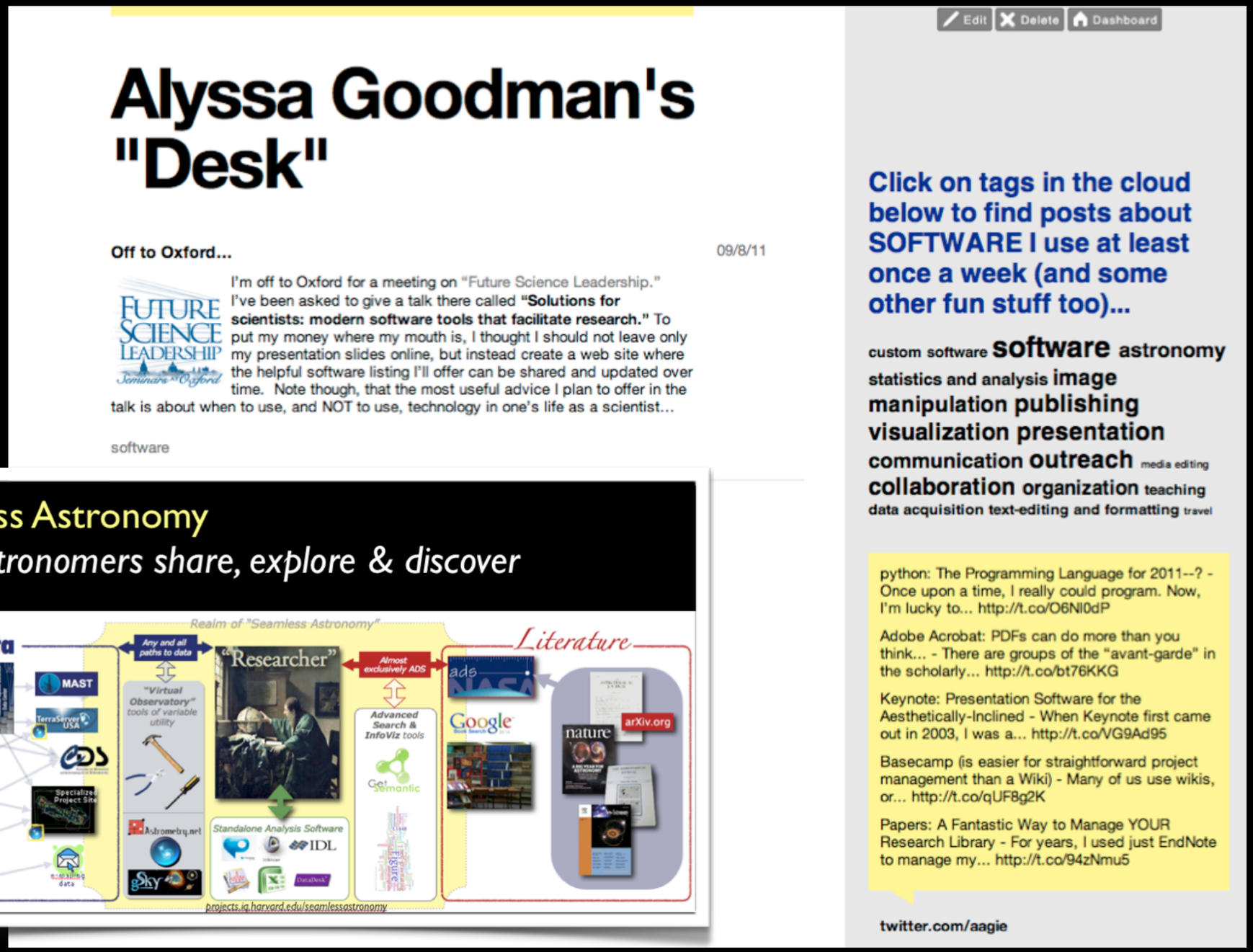
2011 Microsoft eScience Workshop: Transforming Scholarly Communication, 23-25 October 2011, Cambridge, MA, USA [Oct. 23 workshop agenda]

Microsoft Research eScience in Action Workshop, 4-5 December 2011, Stockholm, Sweden

7th International Digital Curation Conference, 5-7 December 2011, Bristol, UK

“Solutions for scientists:
modern software tools that facilitate research.”

"Solutions for scientists:
modern software tools that facilitate research."



Alyssa Goodman's "Desk"

Off to Oxford... 09/8/11

I'm off to Oxford for a meeting on "Future Science Leadership." I've been asked to give a talk there called **"Solutions for scientists: modern software tools that facilitate research."** To put my money where my mouth is, I thought I should not leave only my presentation slides online, but instead create a web site where the helpful software listing I'll offer can be shared and updated over time. Note though, that the most useful advice I plan to offer in the talk is about when to use, and NOT to use, technology in one's life as a scientist...

software

Edit Delete Dashboard

Click on tags in the cloud below to find posts about SOFTWARE I use at least once a week (and some other fun stuff too)...

custom software **software** astronomy statistics and analysis **image manipulation publishing visualization presentation communication outreach** media editing **collaboration organization** teaching data acquisition text-editing and formatting travel

python: The Programming Language for 2011--? - Once upon a time, I really could program. Now, I'm lucky to... http://t.co/O6Nl0dP

Adobe Acrobat: PDFs can do more than you think... - There are groups of the "avant-garde" in the scholarly... http://t.co/bt76KKG

Keynote: Presentation Software for the Aesthetically-Inclined - When Keynote first came out in 2003, I was a... http://t.co/VG9Ad95

Basecamp (is easier for straightforward project management than a Wiki) - Many of us use wikis, or... http://t.co/qUF8g2K

Papers: A Fantastic Way to Manage YOUR Research Library - For years, I used just EndNote to manage my... http://t.co/94zNmu5

twitter.com/aagie

alyssagoodman.tumblr.com

Data

[Information, Communication]

Career

[Time allocation, Communication]

Science

[Analysis, Communication]

Life

[Organization, Communication]

Offline

Online

Astronomy (domain-specific)

Statistics, Analysis

Data Acquisition

Image Manipulation

Collaboration

"Publishing"

Visualization

Communication

Text Editing

Outreach

Travel

Presentation

Please remember me!

Teaching

Organization

Custom Software

Media Editing

Data

[Information, Communication]

Image Manipulation

Astronomy (domain-specific)

Statistics, Analysis

Visualization

Career

[Time allocation, Communication]

Teaching

"Publishing"

Communication

Presentation

Collaboration

Outreach

Travel

Science

[Analysis, Communication]

Custom Software

Text Editing

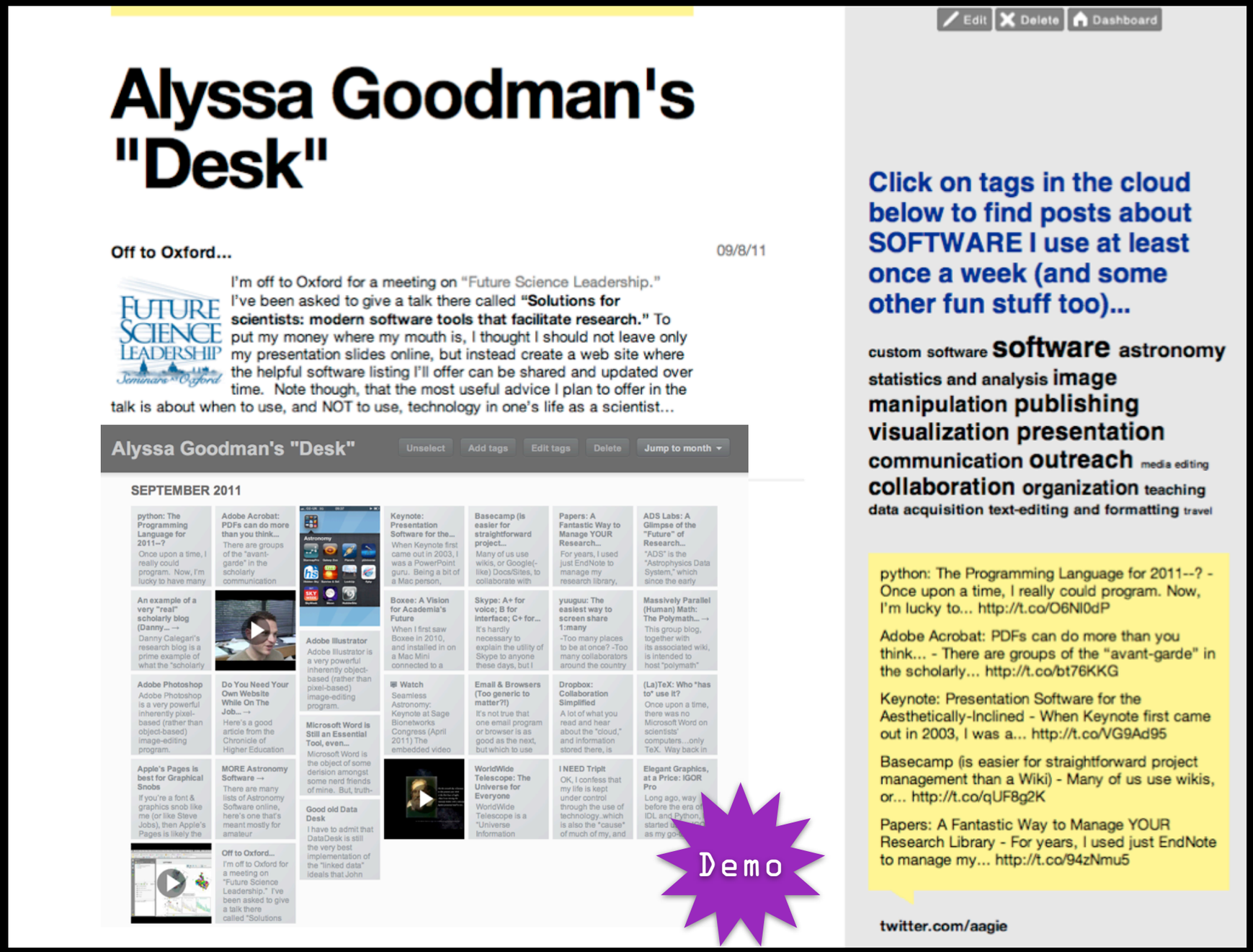
Media Editing

Organization

Life

[Organization, Communication]

"Solutions for scientists:
modern software tools that facilitate research."



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Alyssa Goodman's "Desk"

Unselect | Add tags | Edit tags | Delete | Jump to month

SEPTEMBER 2011

python: The Programming Language for 2011--?

Once upon a time, I really could program. Now, I'm lucky to have many

Adobe Acrobat: PDFs can do more than you think...

There are groups of the "avant-garde" in the scholarly communication

Keynote: Presentation Software for the...

When Keynote first came out in 2003, I was a PowerPoint guru. Being a bit of a Mac person,

Basecamp (is easier for straightforward project...

Many of us use wikis, or Google(-like) Docs/Sites, to collaborate with

Papers: A Fantastic Way to Manage YOUR Research...

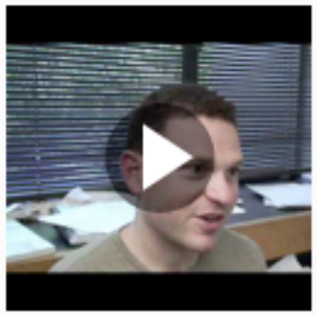
For years, I used just EndNote to manage my research library,

ADS Labs: A Glimpse of the "Future" of Research...

"ADS" is the "Astrophysics Data System," which since the early

An example of a very "real" scholarly blog (Danny... →

Danny Calegari's research blog is a prime example of what the "scholarly



Adobe Illustrator

Adobe Illustrator is a very powerful inherently object-based (rather than pixel-based) image-editing program.

Boxee: A Vision for Academia's Future

When I first saw Boxee in 2010, and installed in on a Mac Mini connected to a

Skype: A+ for voice; B for interface; C+ for...

It's hardly necessary to explain the utility of Skype to anyone these days, but I

yuuguu: The easiest way to screen share 1:many

-Too many places to be at once? -Too many collaborators around the country

Massively Parallel (Human) Math: The Polymath... →

This group blog, together with its associated wiki, is intended to host "polymath"

Adobe Photoshop

Adobe Photoshop is a very powerful inherently pixel-based (rather than object-based) image-editing program.

Do You Need Your Own Website While On The Job... →

Here's a good article from the Chronicle of Higher Education

Microsoft Word is Still an Essential Tool, even...

Microsoft Word is the object of some derision amongst some nerd friends of mine. But, truth-

Watch

Seamless Astronomy: Keynote at Sage Bionetworks Congress (April 2011) The embedded video

Email & Browsers (Too generic to matter?!)

It's not true that one email program or browser is as good as the next, but which to use

Dropbox: Collaboration Simplified

A lot of what you read and hear about the "cloud," and information stored there, is

(La)TeX: Who *has to* use it?

Once upon a time, there was no Microsoft Word on scientists' computers...only TeX. Way back in

Apple's Pages is best for Graphical Snobs

If you're a font & graphics snob like me (or like Steve Jobs), then Apple's Pages is likely the

MORE Astronomy Software →

There are many lists of Astronomy Software online, here's one that's meant mostly for amateur

WorldWide Telescope: The Universe for Everyone

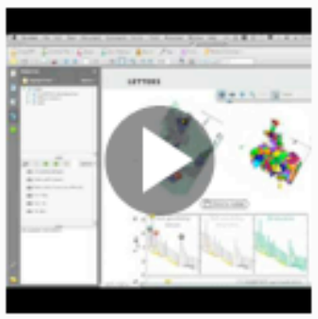
WorldWide Telescope is a "Universe Information

I NEED TripIt

OK, I confess that my life is kept under control through the use of technology..which is also the *cause* of much of my, and

Elegant Graphics, at a Price: IGOR Pro

Long ago, way before the era of IDL and Python, I started using IGOR as my go-to tool for

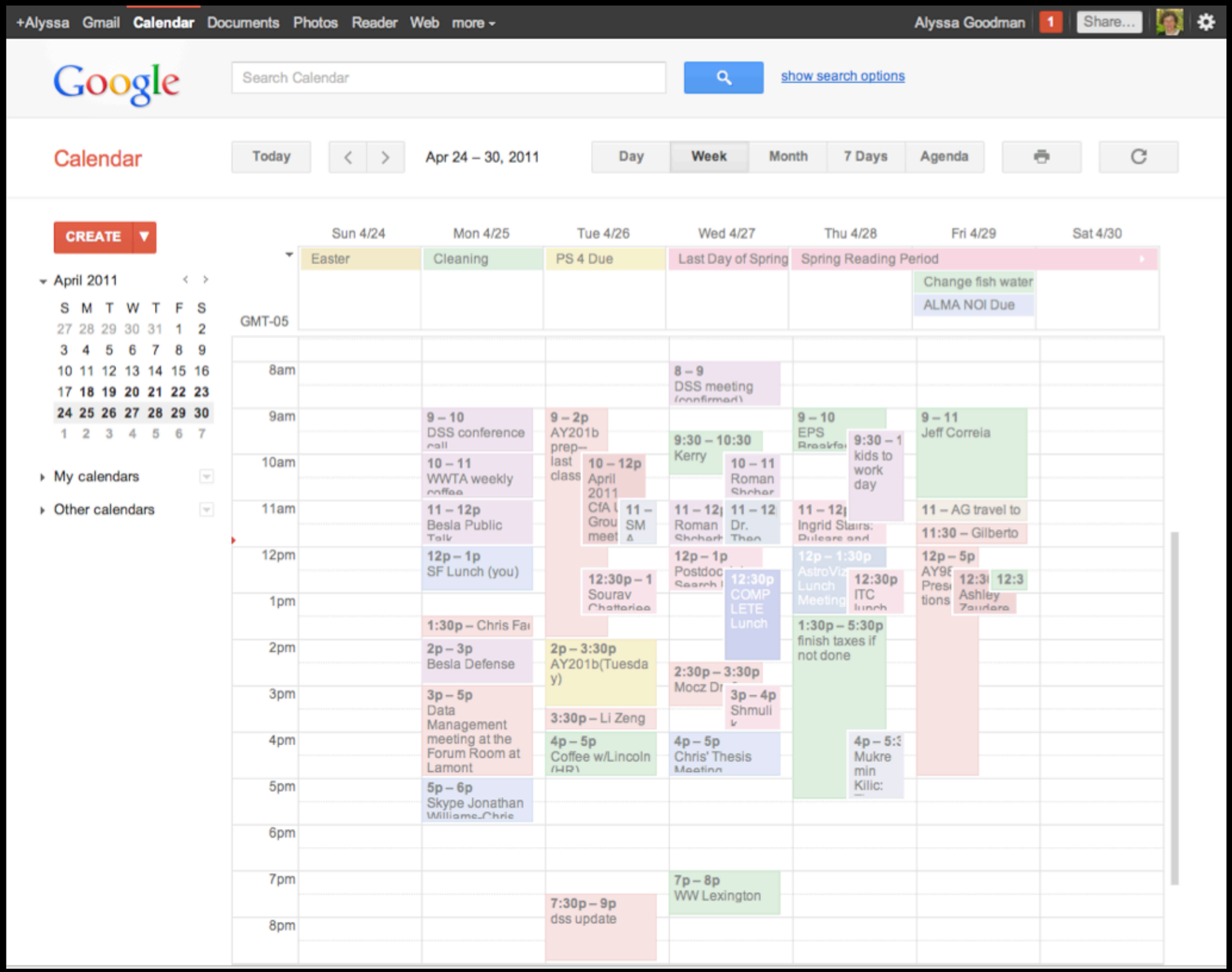


Off to Oxford...

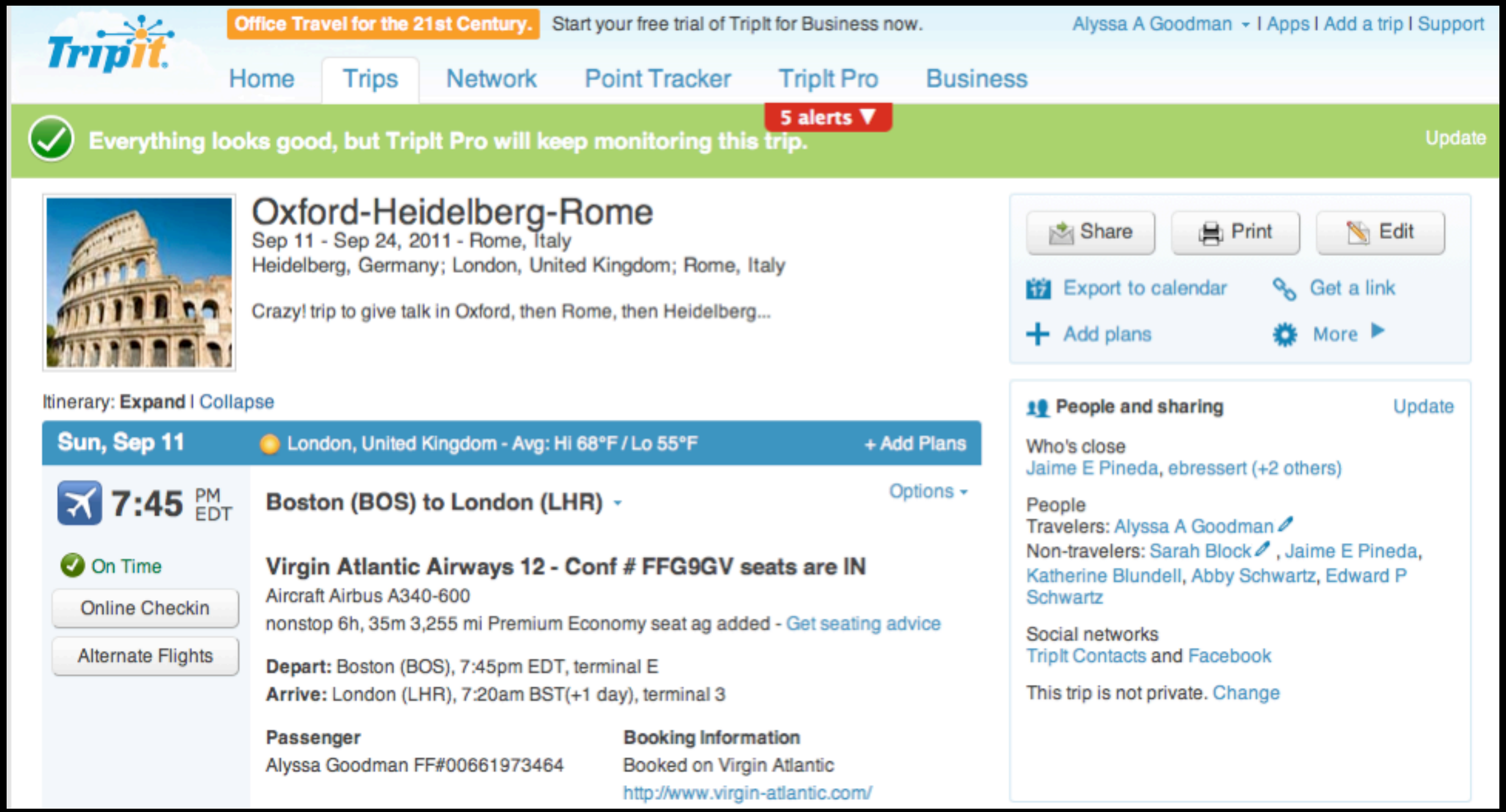
I'm off to Oxford for a meeting on "Future Science Leadership." I've been asked to give a talk there called "Solutions

Information Aggregation

Information Aggregation



Information Aggregation



Information Aggregation

Calendar & Map

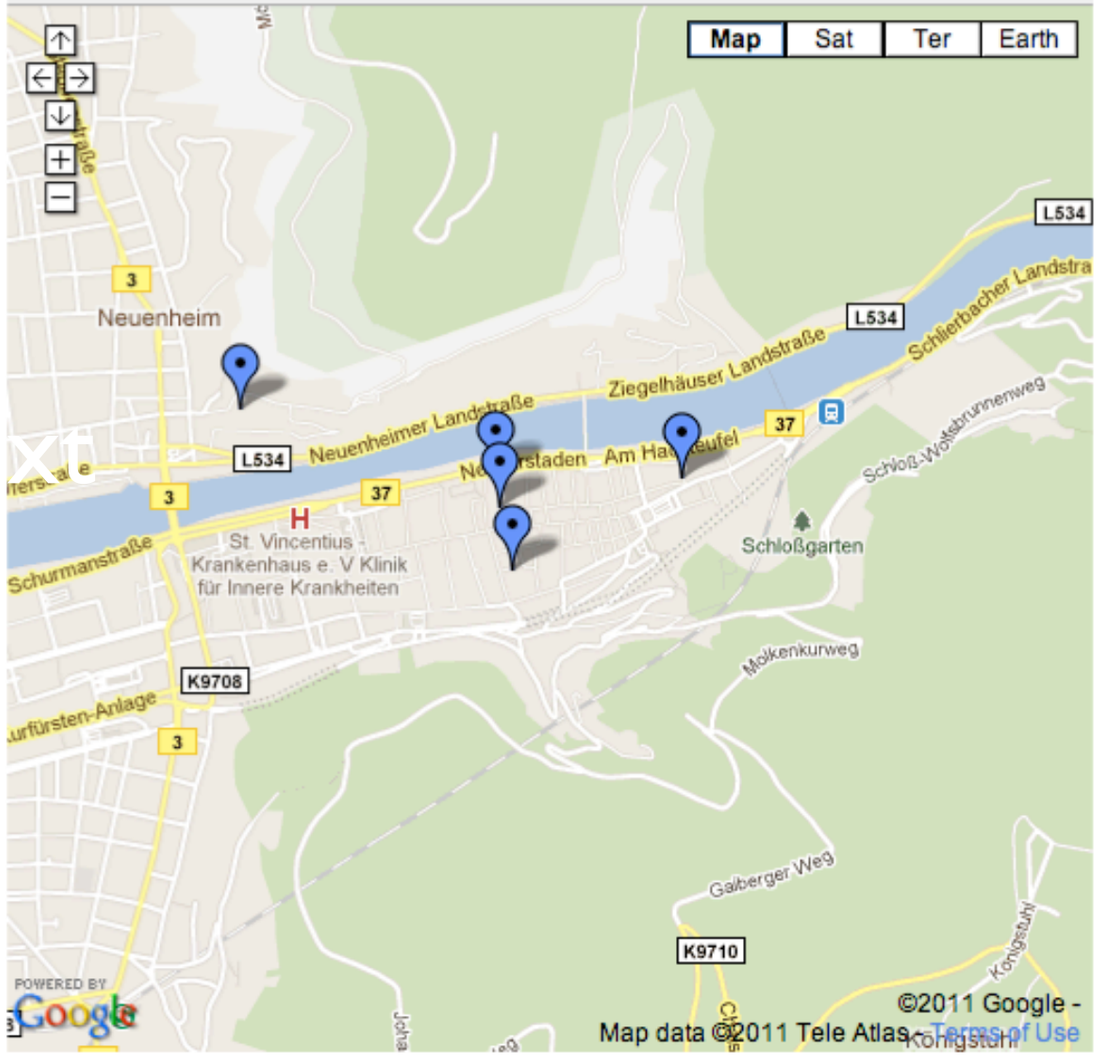
Visit to Heidelberg 2011

Today | Tuesday, September 6 | Print | Week | Month | Agenda

Thursday, September 15
10:30pm AG check in to Qube hotel in Heidelberg
Friday, September 16
9:00am Meet with Ralf, Rahul, Chris, et al. (all day)
Saturday, September 17
9:00am Meet with Ralf, Rahul, Chris, et al. again Saturday if weekend is OK
Sunday, September 18
9:30am AG leaves for Rome
Wednesday, September 21
7:00pm Dinner of Astronomische Gesellschaft
Thursday, September 22
9:30am Visit ITA or MPI, depending on availability/timing
1:00pm Visit HdA, begin at 1 PM local time
4:00pm Meet with Andreas Reuter (+Volker Springel?) at HdA
6:00pm Dinner hosted by Andreas Reuter
Friday, September 23
9:00am Attend as much of AG meeting as feasible
12:25pm AG give Viz talk at AG meeting
2:00pm Conclude collaboration at ITA
Saturday, September 24
8:30am AG leaves Heidelberg for Frankfurt/Home

Events shown in time zone: Berlin | Google Calendar

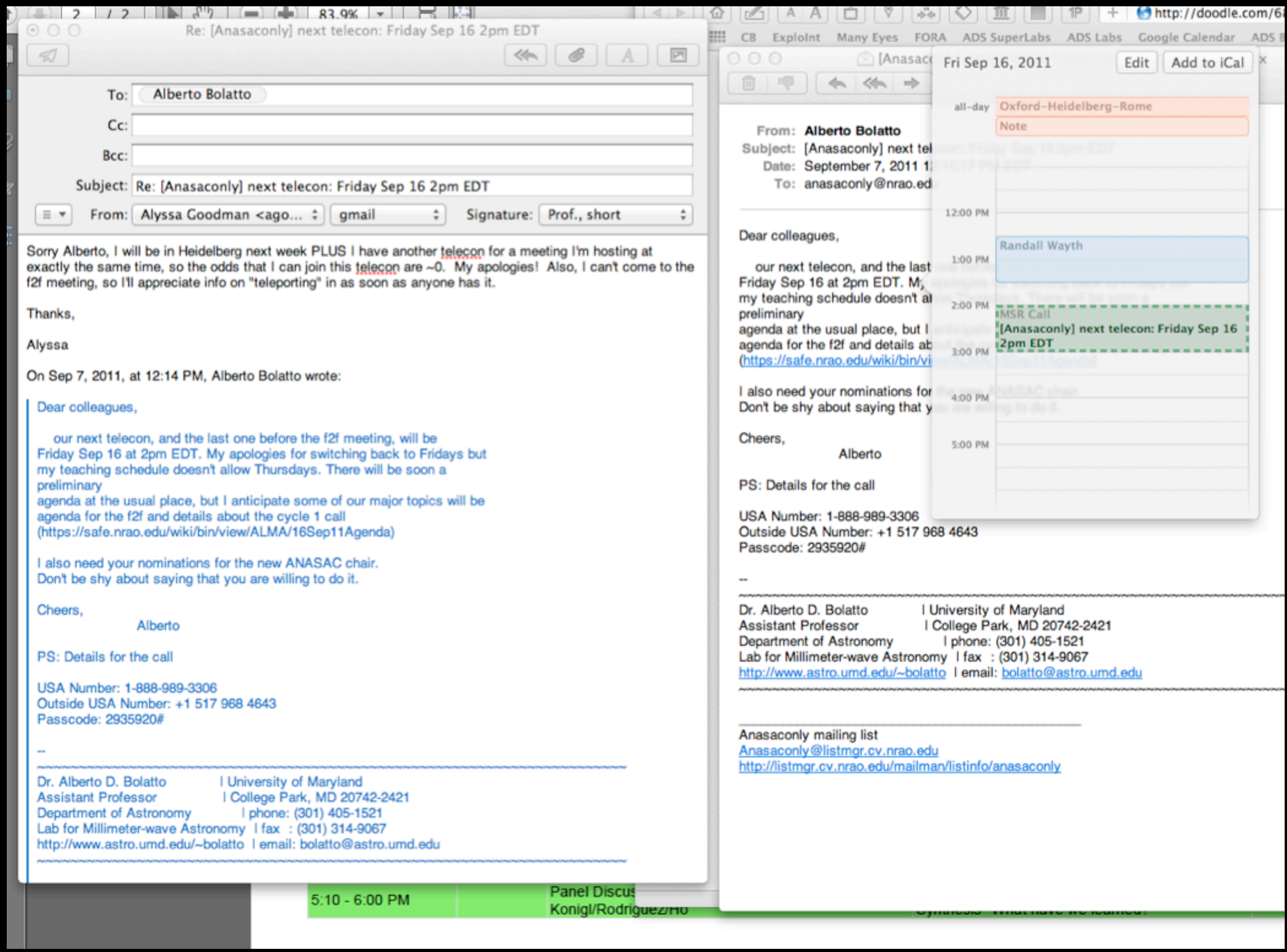
Heidelberg Locations



Send email to Alyssa? agoodman@cfa.harvard.edu
SMS or call her? +16172307080

https://sites.google.com/site/agheidelberg2011/

Information Aggregation

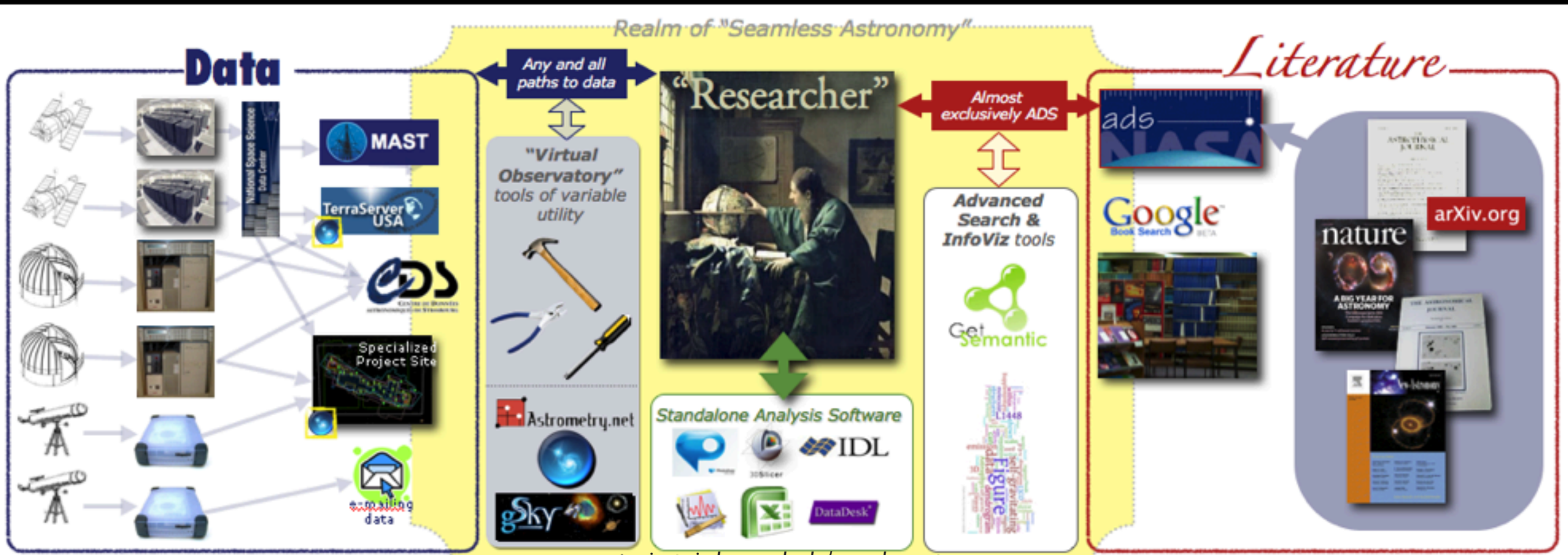


WWT/Seamless Astronomy Core Collaboration
J. Fay (MSR), A. Goodman (CfA), G. Muench (CfA), A. Pepe (CfA), C. Wong (MSR)

Information Aggregation

Seamless Astronomy

How astronomers share, explore & discover



Alyssa A. Goodman

Harvard-Smithsonian Center for Astrophysics

with

Alberto Accomazzi, Douglas Burke, Raffaele D'Abrusco, Rahul Davé, Christopher Erdmann, Pepi Fabbiano, Jay Luker, Gus Muench, Michael Kurtz & Alberto Pepe (Harvard-Smithsonian CfA); Eli Bressert (U. Exeter); Tim Clark (Massachusetts General Hospital/Harvard Medical School); Mercé Crosas (Harvard Institute for Quantitative Social Science; Chris Borgman (UCLA); Jonathan Fay & Curtis Wong (Microsoft Research)

From: Abstract Service <ads@cfa.harvard.edu>
Subject: **myADS Notification (Astronomy database)**
Date: March 23, 2010 12:19:23 AM EDT
To: Alyssa Goodman

myADS Personal Notification Service
for Alyssa Goodman
Tue Mar 23 00:19:23 2010
Astronomy database

ADS Main Queries

Astronomy
Physics
arXiv e-prints
FAQ
What's new

Current Tables of Contents

Astronomical Journal
Astronomy & Astrophysics
Astronomy & Astrophysics Supplements
Astrophysical Journal

GOODMAN, ALYSSA - Citations: 3310 (total 4002)

2010NewA...15..444K: Karatas,+: New intrinsic-colour calibration for uvby-beta photometry
2010MNRAS.403.1054D: Dabringhausen,+: Mass loss and expansion of ultra compact dwarf galaxies through gas exp
stellar evolution for top-heavy s
mass functions
2010ApJ...713..269F: Federrath
Collapse and Accretion in Turb
Clouds: Implementation and Co
Sink Particles in AMR and SPH
2010ApJ...712.1403P: Pech,+:
a Recent Bipolar Ejection in the
Hierarchical Multiple System IR
2422
2010ApJ...712.1137K: Kauffma

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2010A&A...511A..90B: Breddels,+: Distance determination for RAVE stars using stellar

Imagine astronomy research as seamless as travel research...

From: Kayak Alert <alert@kayak.com>
Subject: **Your KAYAK Fare Alert: Boston (BOS) > Munich (MUC)**
Date: March 26, 2010 3:52:30 AM EDT
To: Alyssa Goodman
Reply-To: Kayak Alert <alert@kayak.com>

KAYAK

Fare Alert

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Boston (BOS) to Munich (MUC), round trip
Saturday, Jun 12 to Saturday, Jun 19

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1 stop				

Low Fares* found from Boston (BOS) to:

$99+	Baltimore
$144+	Orlando
$146+	Washington
$152+	Atlanta
$184+	Fort Lauderdale

How?

Literature

WIKIPEDIA
The Free Encyclopedia

AstroBetter

Blogs, Wikis, etc.

Data

"Registries"

DataScope

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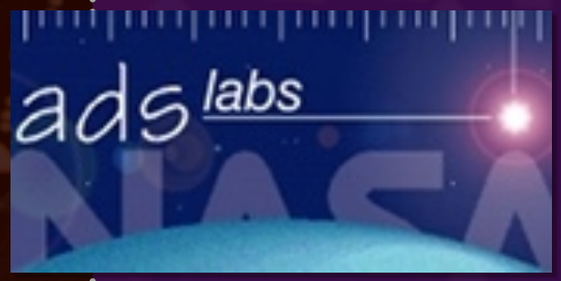
Literature

AstroBetter

Blogs, Wikis, etc.

"Seamless Astronomy" (Tools)



WorldWide Telescope

TOPCAT

ds9

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Literature

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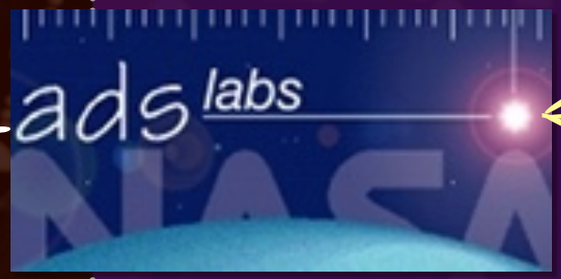

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Literature

ads labs

WIKIPEDIA
The Free Encyclopedia

AstroBetter

Blogs, Wikis, etc.

"Seamless Astronomy" (Tools)

Astrometry.net

flickr

ALADIN

WorldWide Telescope

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SAMP

Data

VizieR

SIMBAD

Astro Grid

VAO

IVOA

EURO-VO AIDA Astronomical Infrastructure for Data Access

"Registries"

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Literature

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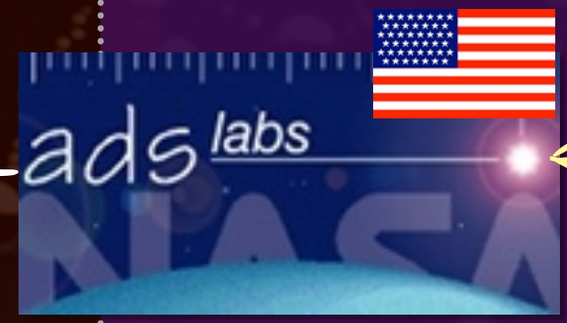

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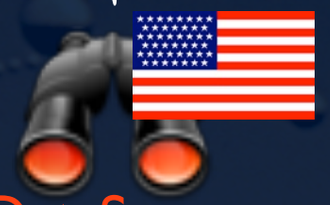
SAMP



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Blogs, Wikis, etc.

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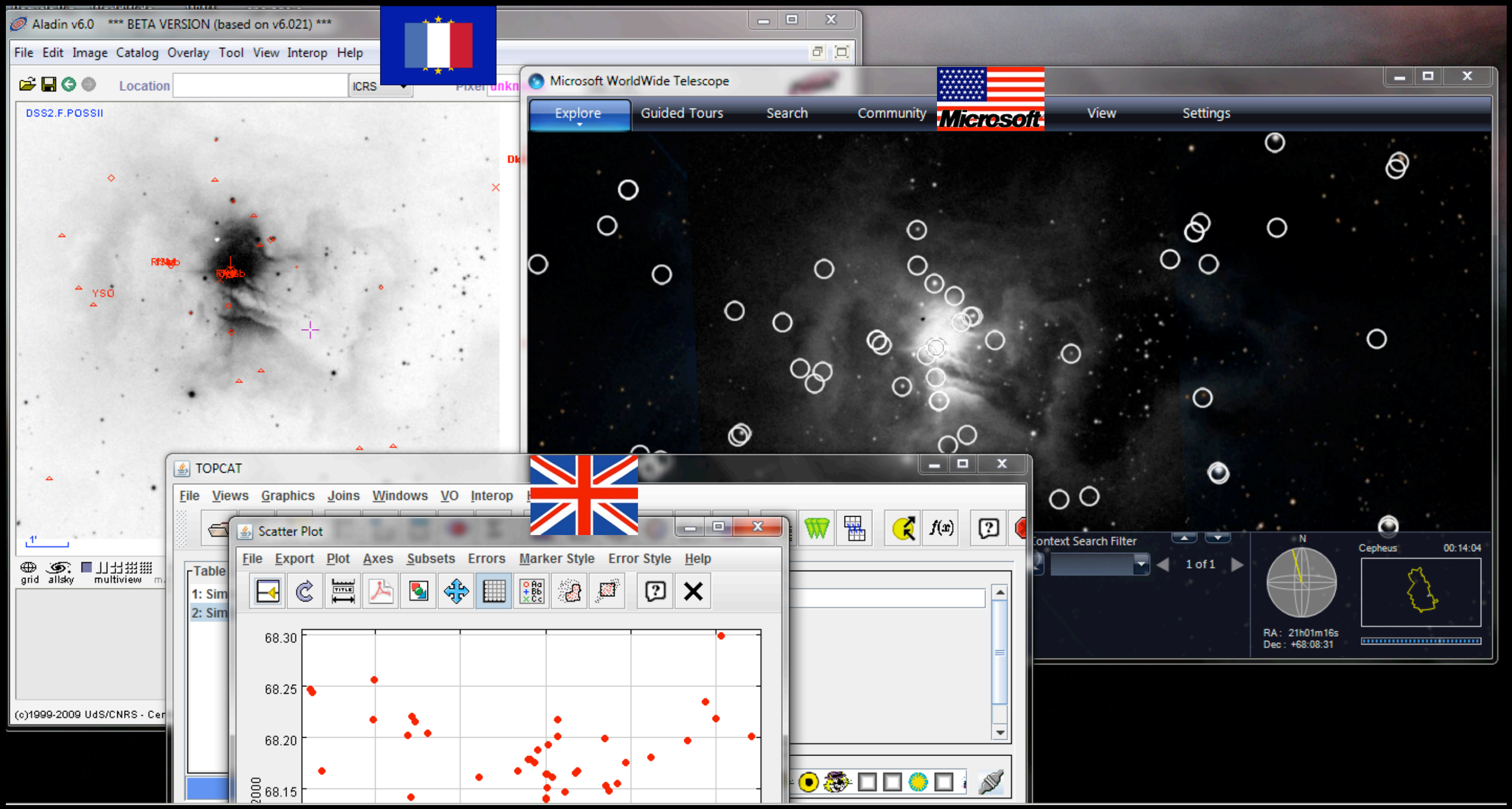
SAMP

(Simple Application Messaging Protocol)

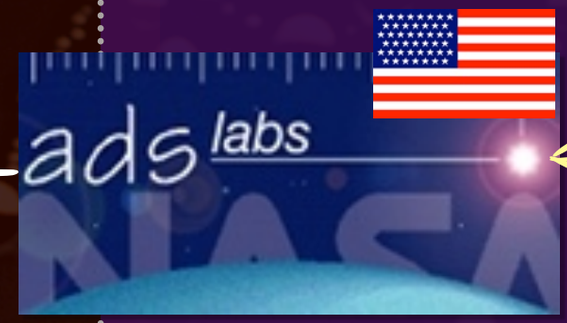


link to 12/2010 IVOA recommendation

Literature

"Seamless Astronomy" (Tools)

Data



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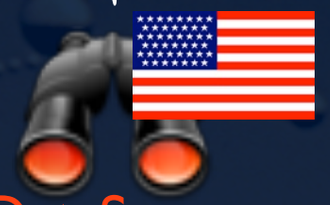

DataScope

Blogs, Wikis, etc.

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The ADS is operated by the Smithsonian Astrophysical Observatory under NASA Grant NNX09AB39G
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ADS Labs/Seamless Astronomy Core Collaboration

*A. **Accomazzi**, A. Goodman, M. **Kurtz**, R. **Davé**, J. Luker, G. Muench, A. Pepe*

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- Amano, T (2)
- Angel, J (2)
- Asensio Ramos, A (2)
- Balasubramaniam, K (2)

Keywords

Archives

Missions

SIMBAD Objects
- Other object (3)
- Star (3)
- Nebula (1)
- NGC 7027 [1]
- [X]

ADS Publications
SIMBAD Info
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Refereed status

Dates

3. 2010ApJ...716L...1A **The J = 1-0 Transitions of 12CH+, 13CH+, and 12CD+**
Amano, T.
The Astrophysical Journal Letters, Volume 716, Issue 1, pp. L1-L3 (2010). Jun 2010

4. 2009ApJ...705L.176S **Detection of the Zeeman Effect in the 36 GHz Class I CH3OH Maser Line with the EVLA**
Sarma, A. P.; Momjian, E.
The Astrophysical Journal Letters, Volume 705, Issue 2, pp. L176-L179 (2009). Nov 2009

11. 2003A&A...412..513B **The molecular Zeeman effect and diagnostics of solar and stellar magnetic fields. II. Synthetic Stokes profiles in the Zeeman regime**
Berdyugina, S. V.; Solanki, S. K.; Frutiger, C.
Astronomy and Astrophysics, v.412, p.513-527 (2003) Dec 2003

12. 2000PASP..112..873W **Magnetism in Isolated and Binary White Dwarfs**
Wickramasinghe, D. T.; Ferrario, Lilia
The Publications of the Astronomical Society of the Pacific, Volume 112, Issue 773, pp. 873-924. Jul 2000

Microsoft WorldWide Telescope Web Client

http://www.worldwidetelescope.org/webclient/default.aspx?wtml=http%3a%2f%2fww

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1 of 1

NGC 7027

"shift-click" on object

Finder Scope

NGC7027

Classification: Planetary Nebula in Cygnus

RA:	21h07m01s	Magnitude:	10.5
Dec:	42 : 14 : 10	Distance:	n/a
Alt:	-02 : 33 : 41	Rise:	23:50
Az:	342 : 18 : 46	Transit:	09:40
		Set:	19:35

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Info

http://gsss.stsci.edu/Acknowledgements/DataCo

Research | Show Object | Close

Look At: Sky

Imagery: Digitized Sky Survey (Color)

Cygnus

NGC7027

1 of 1

N

Cygnus 00:03:37

RA : 21h07m02s
Dec : 42:14:09

Done

Microsoft WorldWide Telescope Web Client

http://www.worldwidetelescope.org/webclient/default.aspx?wtml=http%3a%2f%2fww

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NGC 7027

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Finder Scope

NGC7027

Classification: Planetary Nebula in Cygnus

RA: 21h07m01s Magnitude: 10.5
Dec: 42 : 14 : 10 Distance: n/a
Alt: 02 : 36 : 57 Rise: 23:50
Az: 342 : 29 : 00 Transit: 09:40
Set: 19:35

Name:NGC7027

Information ▶
Imagery ▶
Virtual Observatory Searches ▶

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Properties
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Look up on SIMBAD
Look up on SEDS
Look up on Wikipedia
Look up publications on ADS
Look up on NED
Look up on SDSS

...more data
...or more literature

SIMBAD

Look At: Sky
Imagery: Digitized Sky Survey (Color)

Cygnus

NGC7027

1 of 1

ads labs NASA

RA : 21h07m02s
Dec : 42:14:09

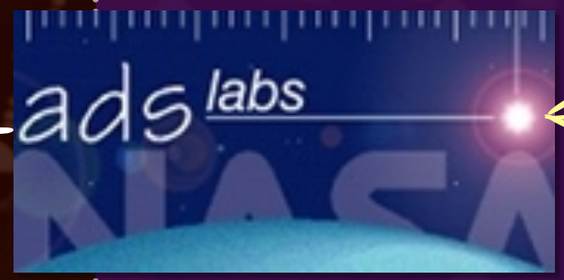
Done

Literature

AstroBetter

Blogs, Wikis, etc.

"Seamless Astronomy" (Tools)



Data

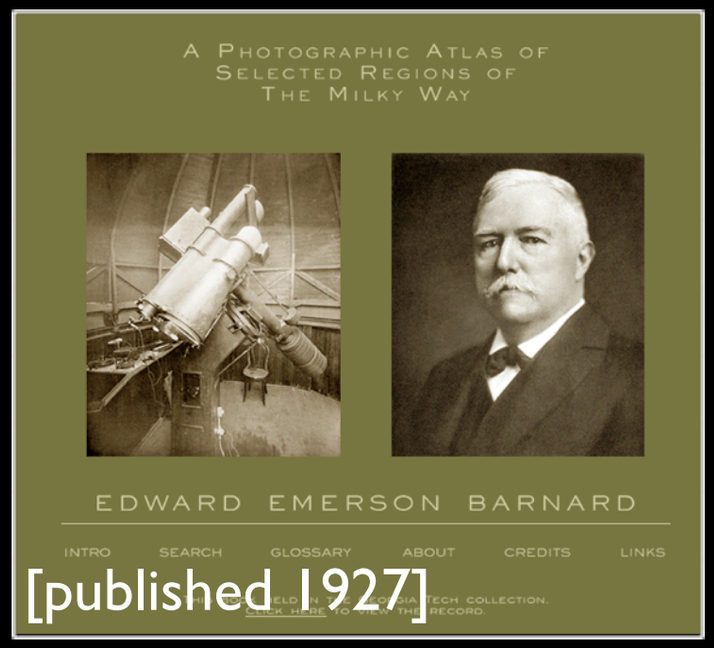
Registries"

DataScope

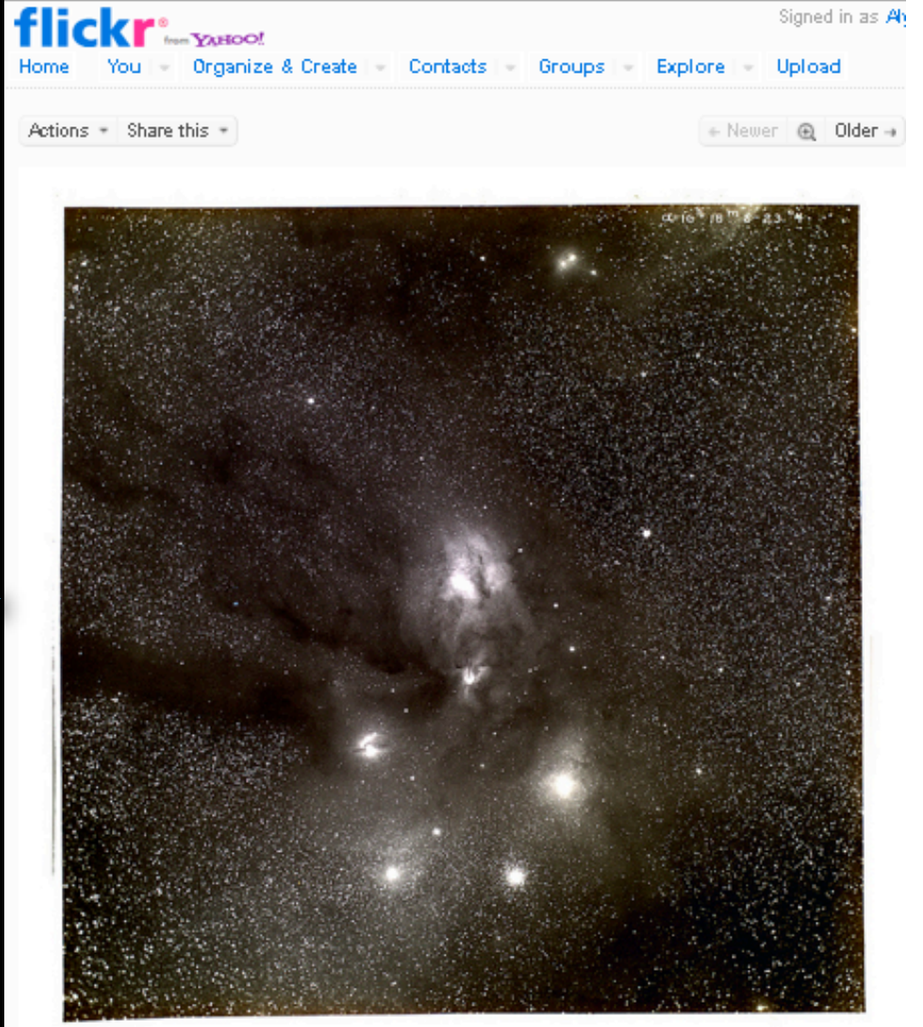
Disclaimer:*This slide shows key excerpts from within the astronomy community & excludes more general s/w that is used, such as Papers, Zotero, Mendeley, EndNote, graphing & statistics packages, data handling software, search engines, etc.*

“Seamless Astronomy”...

astrometry.net + flickr + WWT



[published 1927]



barnardoph

E.E. Barnard's image of Ophiuchus
www.library.gatech.edu/bpdi/bpdi.php

Comments and faves astrometry.net

astrometry.net (6 days ago | reply | delete)
Hello, this is the blind astrometry solver. Your results are:
(RA, Dec) center:(246.421365149, -23.6749819397) degrees
(RA, Dec) center (H:M:S, D:M:S):(16:25:41.128, -23:40:29.935)
Orientation:178.34 deg E of N

Pixel scale:52.94 arcsec/pixel

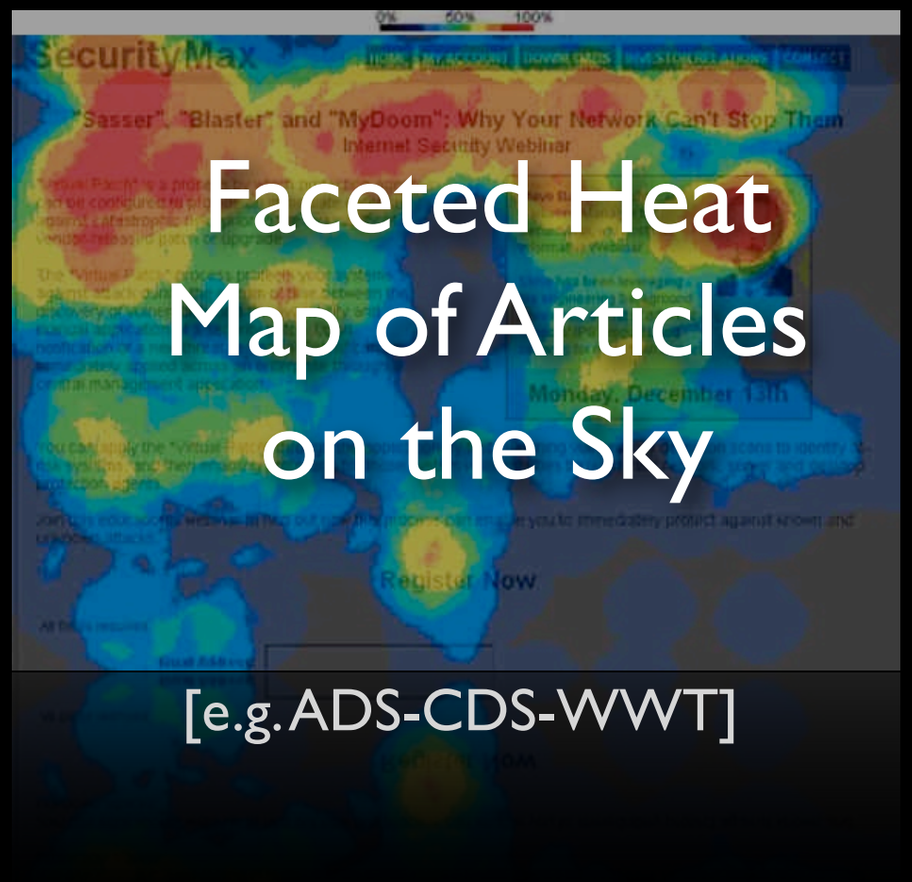
Parity:Reverse ("Left-handed")
Field size :9.41 x 9.41 degrees

Your field contains:
The star Antares (αSco)
The star Graffias (β1Sco)
The star Al Niyat (σSco)
The star τSco
The star ω1Sco
The star νSco
The star ω2Sco
The star ωOph
The star 13Sco
The star οSco
IC 4592
IC 4601
NGC 6121 / M 4
IC 4603
IC 4604 / rho Oph nebula
IC 4605

View in World Wide Telescope

Coming (using astrometry.net++) very soon...

Historical Image Layer Extracted from ALL ADS holdings (using astrometry.net)



Faceted Heat Map of Articles on the Sky

[e.g. ADS-CDS-WWT]

Collaborators: Alberto Accomazzi (CfA); Jonathan Fay (MSR); Alyssa Goodman (CfA); David Hogg (NYU); Gus Muench (CfA); Alberto Pepe (CfA)+advice from Pierre Fernique (CDS) & Thomas Bock (CDS)

Literature

WIKIPEDIA
The Free Encyclopedia

AstroBetter

Blogs, Wikis, etc.

"Seamless Astronomy" (Tools)

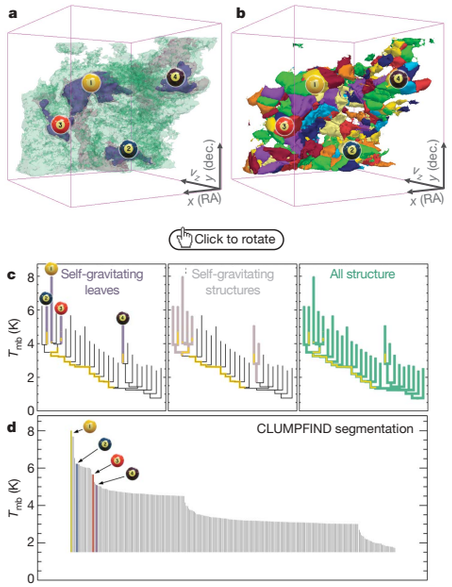


Figure 2 | Comparison of the 'dendrogram' and 'CLUMPFIND' feature-identification algorithms as applied to ^{13}CO emission from the L1448 region of Perseus. a, 3D visualization of the surfaces indicated by colours in the dendrogram shown in **c**. Purple illustrates the smallest scale self-gravitating structures in the region corresponding to the leaves of the dendrogram; pink shows the smallest surfaces that contain distinct self-gravitating leaves within them; and green corresponds to the surface in the data cube containing all the significant emission. Dendrogram branches corresponding to self-gravitating objects have been highlighted in yellow over the range of T_{mb} (main-beam temperature) test-level values for which the virial parameter is less than 2. The *x*–*y* locations of the four 'self-gravitating' leaves labelled with billiard balls are the same as those shown in Fig. 1. The 3D visualizations show position–position–velocity (*p*–*p*–*v*) space. RA, right ascension; dec., declination. For comparison with the ability of dendrograms (**c**) to track hierarchical structure, **d** shows a pseudo-dendrogram of the CLUMPFIND segmentation (**b**), with the same four labels used in Fig. 1 and in **a**. As 'clumps' are not allowed to belong to larger structures, each pseudo-branch in **d** is simply a series of lines connecting the maximum emission value in each clump to the threshold value. A very large number of clumps appears in **b** because of the sensitivity of CLUMPFIND to noise and small-scale structure in the data. In the online PDF version, the 3D cubes (**a** and **b**) can be rotated to any orientation, and surfaces can be turned on and off (interaction requires Adobe Acrobat version 7.0.8 or higher). In the printed version, the front face of each 3D cube (the 'home' view in the interactive online version) corresponds exactly to the patch of sky shown in Fig. 1, and velocity with respect to the Local Standard of Rest increases from front (-0.5 km s^{-1}) to back (8 km s^{-1}).

data, CLUMPFIND typically finds features on a limited range of scales, above but close to the physical resolution of the data, and its results can be overly dependent on input parameters. By tuning CLUMPFIND's two free parameters, the same molecular-line data set[8] can be used to show either that the frequency distribution of clump mass is the same as the initial mass function of stars or that it follows the much shallower mass function associated with large-scale molecular clouds (Supplementary Fig. 1).

Four years before the advent of CLUMPFIND, 'structure trees'[9] were proposed as a way to characterize clouds' hierarchical structure using 2D maps of column density. With this early 2D work as inspiration, we have developed a structure-identification algorithm that abstracts the hierarchical structure of a 3D (*p*–*p*–*v*) data cube into an easily visualized representation called a 'dendrogram'[10]. Although well developed in other data-intensive fields[11,12], it is curious that the application of tree methodologies so far in astrophysics has been rare, and almost exclusively within the area of galaxy evolution, where 'merger trees' are being used with increasing frequency[13].

Figure 3 and its legend explain the construction of dendrograms schematically. The dendrogram quantifies how and where local maxima of emission merge with each other, and its implementation is explained in Supplementary Methods. Critically, the dendrogram is determined almost entirely by the data itself, and it has negligible sensitivity to algorithm parameters. To make graphical presentation possible on paper and 2D screens, we 'flatten' the dendrograms of 3D data (see Fig. 3 and its legend), by sorting their 'branches' to not cross, which eliminates dimensional information on the *x* axis while preserving all information about connectivity and hierarchy. Numbered 'billiard ball' labels in the figures let the reader match features between a 2D map (Fig. 1), an interactive 3D map (Fig. 2a online) and a sorted dendrogram (Fig. 2c).

A dendrogram of a spectral-line data cube allows for the estimation of key physical properties associated with volumes bounded by iso-surfaces, such as radius (R), velocity dispersion (σ_v) and luminosity (L). The volumes can have any shape, and in other work[14] we focus on the significance of the especially elongated features seen in L1448 (Fig. 2a). The luminosity is an approximate proxy for mass, such that $M_{lum} = X_{13CO}L_{13CO}$, where $X_{13CO} = 8.0 \times 10^{20}$ cm^2 K^{-1} km^{-1} s (ref. 15; see Supplementary Methods and Supplementary Fig. 2). The derived values for size, mass and velocity dispersion can then be used to estimate the role of self-gravity at each point in the hierarchy, via calculation of an 'observed' virial parameter, $\alpha_{obs} = 5\sigma_v^2 R/GM_{lum}$. In principle, extended portions of the tree (Fig. 2, yellow highlighting) where $\alpha_{obs} < 2$ (where gravitational energy is comparable to or larger than kinetic energy) correspond to regions of *p*–*p*–*v* space where self-gravity is significant. As α_{obs} only represents the ratio of kinetic energy to gravitational energy at one point in time, and does not explicitly capture external over-pressure and/or magnetic fields[16], its measured value should only be used as a guide to the longevity (boundedness) of any particular feature.

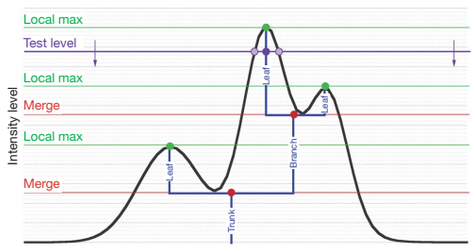


Figure 3 | Schematic illustration of the dendrogram process. Shown is the construction of a dendrogram from a hypothetical one-dimensional emission profile (black). The dendrogram (blue) can be constructed by 'dropping' a test constant emission level (purple) from above in tiny steps (exaggerated in size here, light lines) until all the local maxima and mergers are found, and connected as shown. The intersection of a test level with the emission is a set of points (for example the light purple dots) in one dimension, a planar curve in two dimensions, and an isosurface in three dimensions. The dendrogram of 3D data shown in Fig. 2c is the direct analogue of the tree shown here, only constructed from 'isosurface' rather than 'point' intersections. It has been sorted and flattened for representation on a flat page, as fully representing dendrograms for 3D data cubes would require four dimensions.

Data

VizieR

SIMBAD

Astro Grid

VAO

IVOA

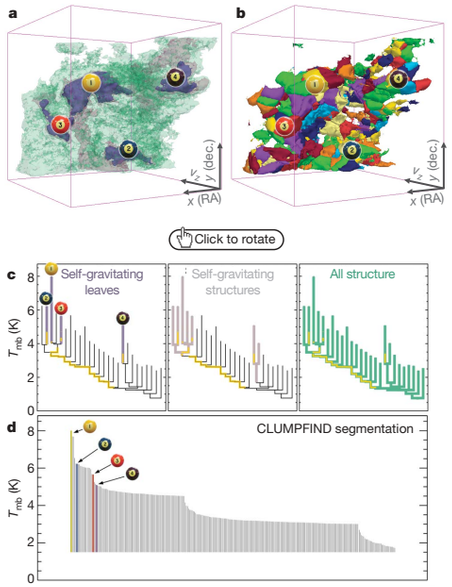
EURO-VO AIDA Astronomical Infrastructure for Data Access

"Registries"

DataScope

Disclaimer: *This slide shows key excerpts from within the astronomy community & excludes more general s/w that is used, such as Papers, Zotero, Mendeley, EndNote, graphing & statistics packages, data handling software, search engines, etc.*

Data in *Literature*



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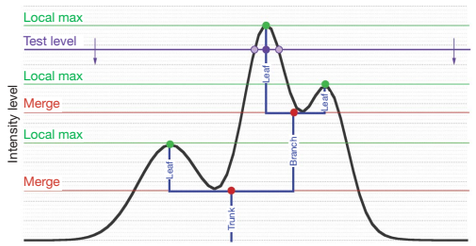

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Note: This work came from the "AstroMed" project am.iic.harvard.edu

Goodman et al. *Nature*, 2009

ADS may be our "way in" via killer apps

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magnetic fields in molecular clouds - *Most relevant*

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- Mouschovias, T (10)
- Andre, P (8)
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- Goodman, A (7)
- Myers, P (7)
- Ostriker, E (7)
- Pudritz, R (7)

Keywords
Archives
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SIMBAD Objects
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Dates
from 1974 to 2011

1. 1999ApJ...520..706C **Magnetic Fields in Molecular Clouds: Observations Confront Theory**
Crutcher, Richard M.
The Astrophysical Journal, Volume 520, Issue 2, pp. 706-713. Aug 1999
Matches in Abstract / Matches in fulltext

2. 1983ApJ...264..485D **Magnetohydrodynamic shock waves in molecular clouds**
Draine, B. T.; Roberge, W. G.; Dalgarno, A.
Astrophysical Journal, Part 1, vol. 264, Jan. 15, 1983, p. 485-507. Jan 1983
Matches in Abstra

3. 2001ApJ...546..
Molecular Clou
Ostriker, Eve C.;
The Astrophysical
Matches in Abstra

4. 2007ARA&A..45
McKee, Christop
Annual Review of
Matches in Abstra

5. 2004RvMP...76.
Mac Low, Morde
Reviews of Moder
Matches in Abstra

6. 1989ARA&A..27
Genzel, Reinhar
IN: Annual review
Annual Reviews, I
Matches in Abstra

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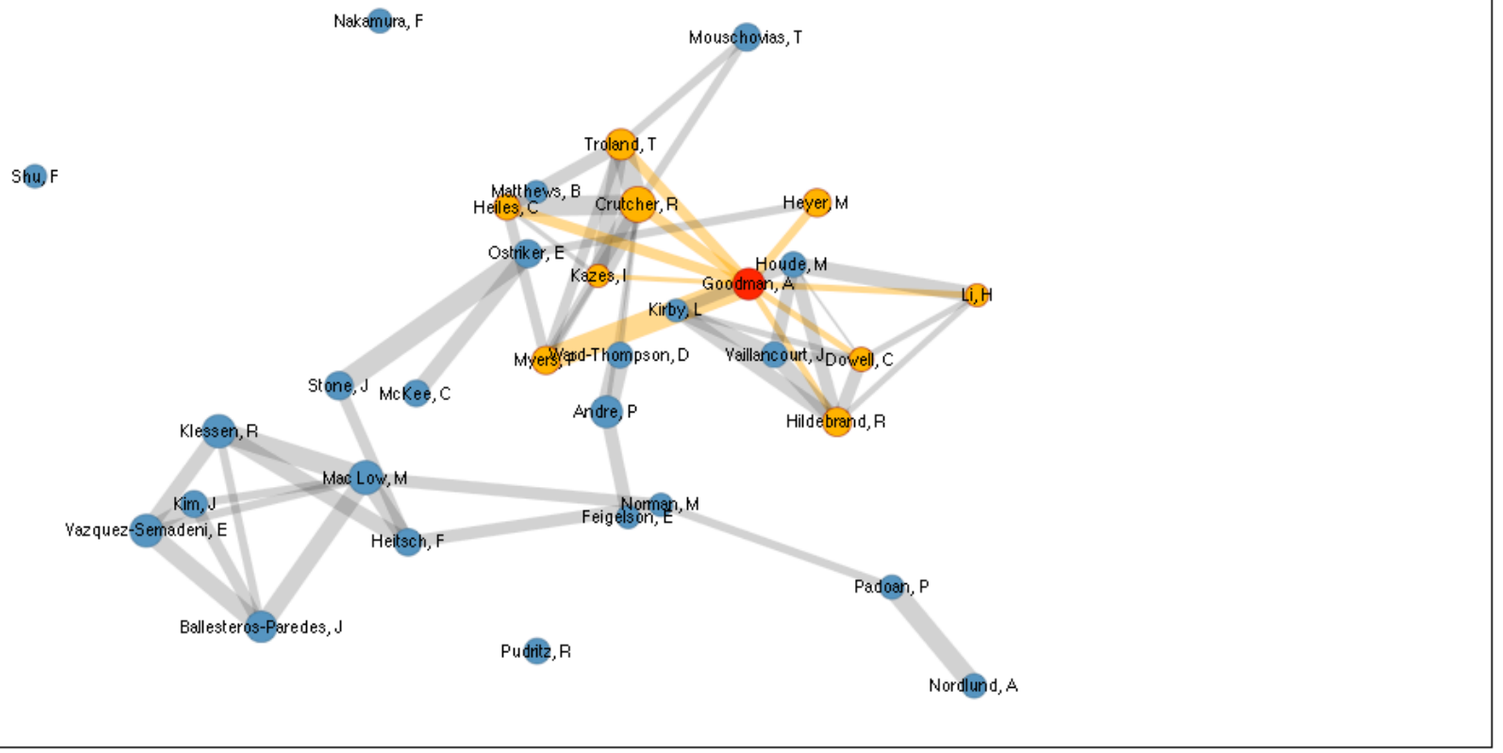

Author network

"Citizen Science" & Outreach

Zooniverse is Oxford-based (Lintott, Simpson et al.)

ZOONIVERSE
REAL SCIENCE ONLINE

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Planet Hunters

Using public data fro
Kepler mission, we a
planets around other

JOIN IN

The Milky Way

The Milky Way Project
measure our galaxy, t
Initially we're asking y
and draw bubbles in b
from the Spitzer Space

JOIN IN

Old Weather

Help scientists recover
observations made by
around the time of Wo

JOIN IN

Moon Zoo

Explore the Moon in u
using images from NA
Reconnaissance Orbite

Live Projects

EN · The Milky Way Project is part of the ZOONIVERSE ...just like SOLAR STORMWATCH

THE MILKY WAY PROJECT

FOLLOW US ON TWITTER
VISIT THE BLOG
MILKY WAY TALK

HOME | TAKE PART | ABOUT | TUTORIAL | MY GALAXY | LOG OUT | GALACTOMETER™ | ADLER

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HIDE ALL
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Microsoft® Research
WorldWide Telescope

Ambassadors Program

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About the WWT Telescope Ambassadors Program

WorldWide Telescope (WWT) is a rich visualization environment that functions as a virtual telescope, allowing anyone to make use of professional astronomical data to explore and understand the universe. As of early 2010, the new WWT Ambassadors Program is recruiting astronomically-literate volunteers, including retired scientists engineers—all of whom will be trained to be experts in using WWT as a teaching tool. Ambassadors will give volunteer presentations at public libraries, community centers, museums, and schools, demonstrating WWT's power to help laypeople visualize and understand our universe.

Read more

John Huchra's Universe

Submitted by patudom on Jan. 11

John Huchra, former president of the **American Astronomical Society**, passed away on October 8, 2010.

John's colleagues at the Harvard-Smithsonian Center for Astrophysics, in collaboration with the creators of WorldWide Telescope at Microsoft Research, have created a new, interactive, WWT Tour to honor John and his career. The Tour primarily focuses on John's quest to map the Universe in three dimensions. It is 12.5 minutes long.

The Tour is best experienced inside the WorldWide Telescope program itself. (**Note: You must have the version of WWT released on 1/13/2011 to view all of this Tour's content. You can download it from here.**) As viewed within the WWT program, the Tour content is interactive, allowing users to pause and explore the parts of the Universe featured in the tour, explore web hyperlinks, and more. For those who do not have the desktop client, the Tour has been posted as a video as well.

Video (Interactive WWT features will be disabled)

John Huchra's Universe

Friends of John Huchra have released a new WWT Tour to honor John and his work. The Tour primarily focuses on John's quest to map the Universe in three dimensions. You can view the Tour here.

Upcoming

- Cyberlearning Tools for STEM Education Conference
  Mar. 8 - Mar. 9
- Cambridge Science Festival
  Apr. 30 - May. 10

wwtambassadors.org

What else should you/we do? (Your part.)

From: Jaime Pineda <jaime.e.pineda@gmail.com>
Subject: Fwd: arXiv submission submit/0313285
Date: September 7, 2011 8:25:59 AM EDT
To: Alyssa Goodman , Jens Kauffmann , Hector Arce , Scott Schnee , Jonathan Foster , Mario Tafalla Thomas Robitaille <trobitaille@cfa.harvard.edu> and 3 more...

This is the info regarding the astro-ph submission... in case you want t claim ownership :)

Cheers,
Jaime

Begin forwarded message:

From: e-prints@arxiv.org
Date: September 6, 2011 4:07:15 PM GMT+01:00
To: jaime.e.pineda@gmail.com
Subject: **arXiv submission submit/0313285**
Reply-To: www-admin@arxiv.org

We have received your submission to arXiv. Your temporary submission identifier is: submit/0313285.

You may update your submission at: http://arxiv.org/submit/313285

Your article is scheduled to be announced at Wed, 7 Sep 2011 00:00:00 GMT. The abstract will appear in the subsequent mailing as displayed below, except that the submission identifier will be replaced by the official arXiv identifier. Updates before Tue, 6 Sep 2011 20:00:00 GMT will not delay announcement.

A paper password will be emailed to you when the article is announced. You should share this with co-authors to allow them to claim ownership.

If you have a problem that you are not able to resolve through the web interface, contact www-admin@arxiv.org with a description of the issue and reference the submission identifier.

arXiv admin

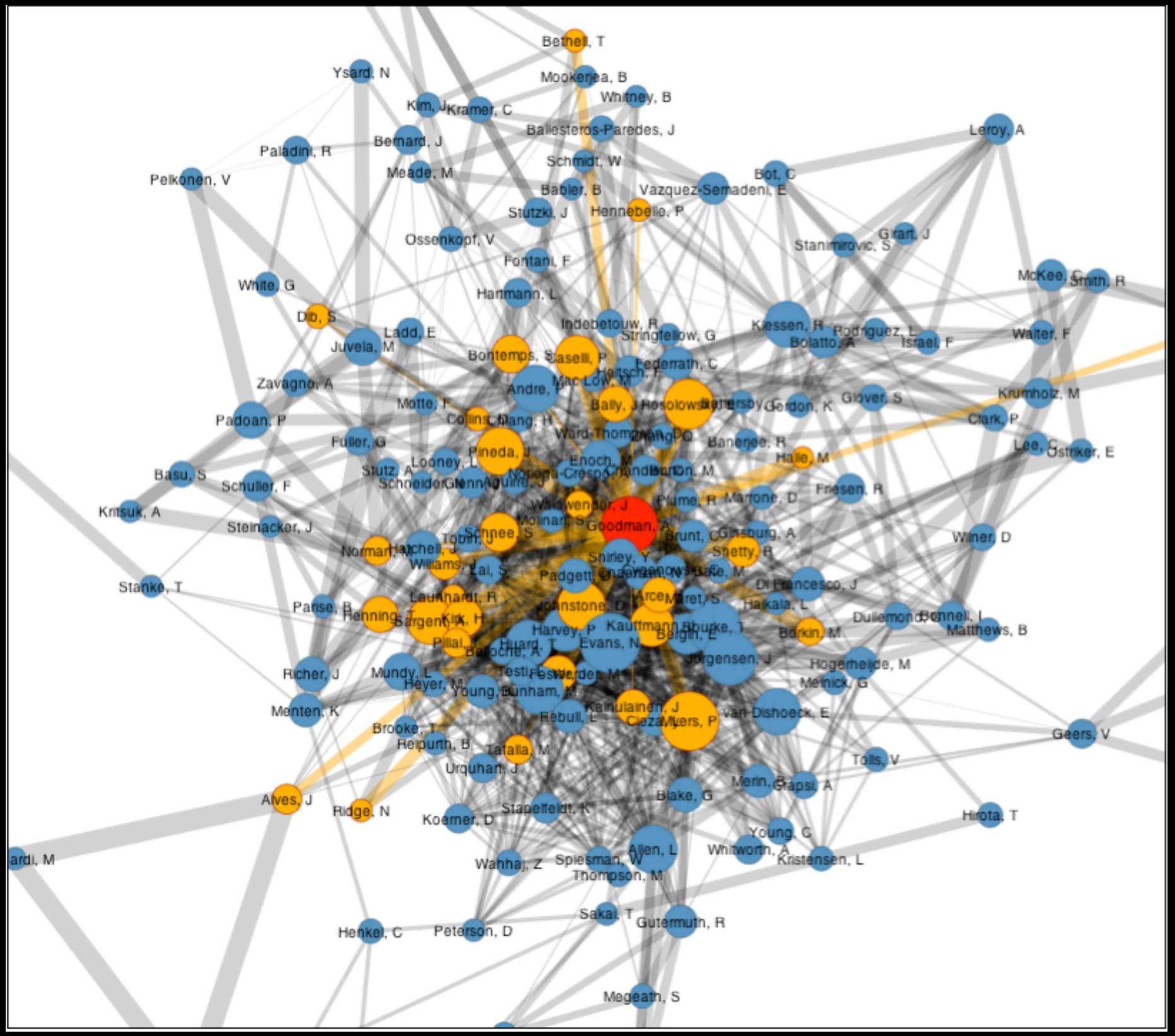
\\
arXiv:submit/0313285
From: Jaime Pineda E <jaime.e.pineda@gmail.com>
Date: Tue, 6 Sep 2011 11:07:15 EST (580kb,D)

Title: The enigmatic core L1451-mm: a first hydrostatic core? or a hidden VeLLO?
Authors: Jaime E. Pineda, H\'ector G. Arce, Scott Schnee, Alyssa A. Goodman, Tyler Bourke, Jonathan B. Foster, Thomas Robitaille, Joel Tanner, Jens Kauffmann, Mario Tafalla, Paola Caselli, Guillem Anglada
Categories: astro-ph.GA
Comments: 15 pages, 9 figures, emulateapj. Accepted by ApJ

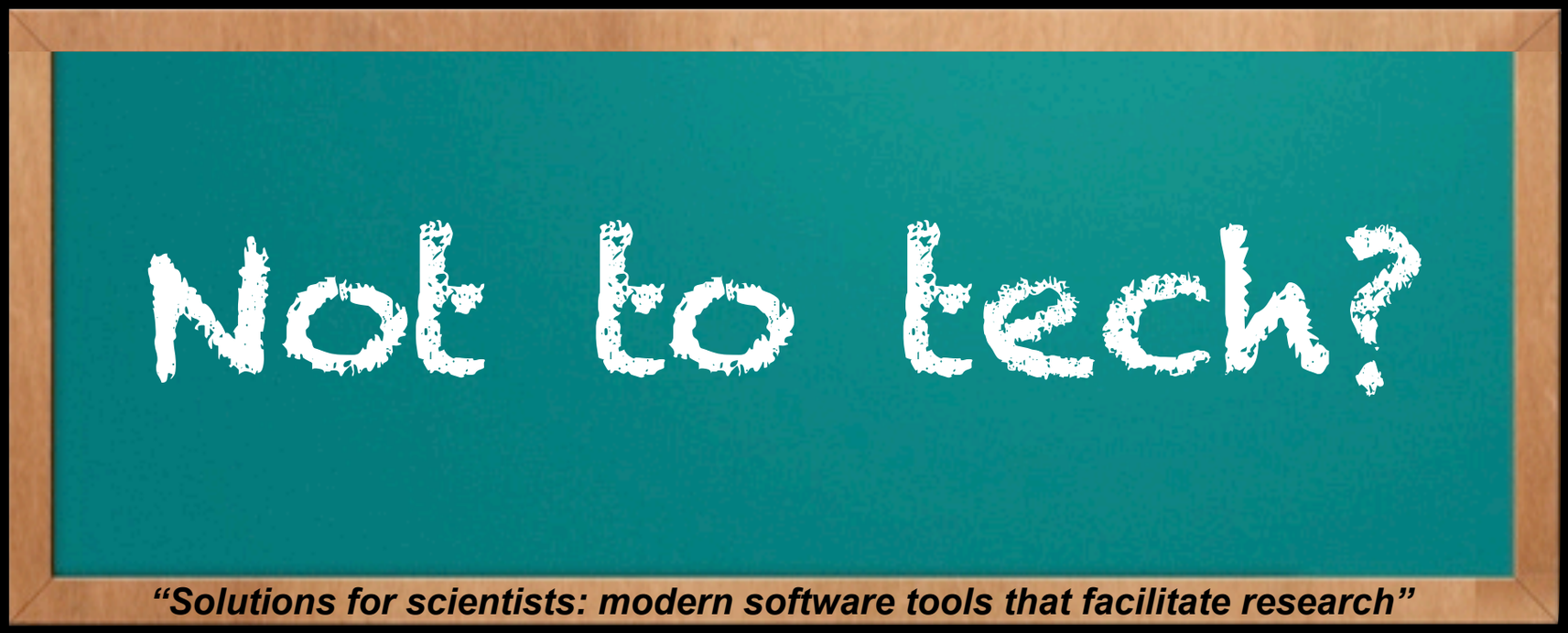
COMPLETE

Citation Network

(from ADS Labs)



2tech, or



Alyssa Goodman

Harvard-Smithsonian Center for Astrophysics