Reusable Social Networking Capabilities for an Earth Science Collaboratory

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The Situation Today

Earth Science Stuff is (still) hard to use...

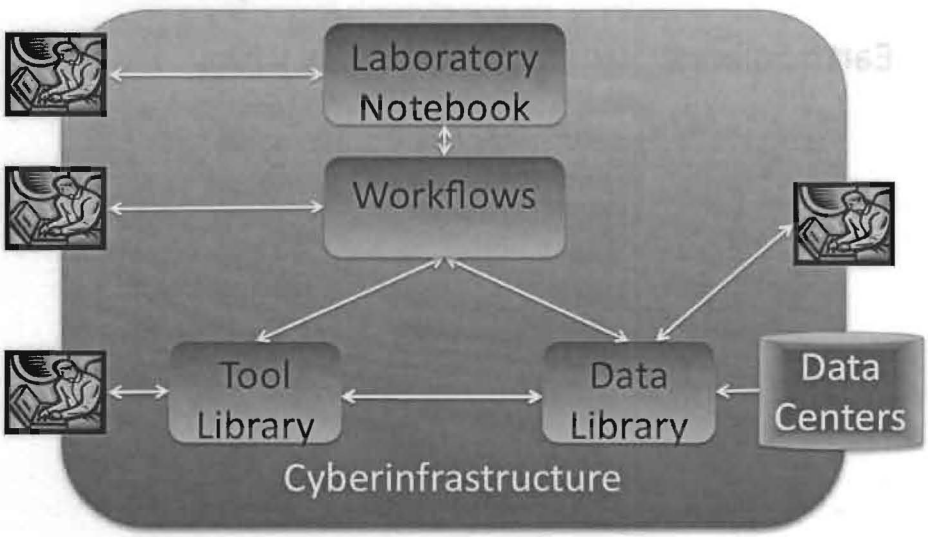
data
science tools / svcs
analysis results
knowledge about
- data
- tools
- analysis methods

find
share
reuse
put together
- data + data
- data + tool
- tool + tool
- desktop + online svc

What Is An Earth Science Collaboratory?

- A rich data analysis environment with:
  - Access to a wide spectrum of Earth Science data
  - A diverse set of science analysis services and tools
  - A means to collaborate on data, tools and analysis
  - ***Supports sharing of data, tools, results and knowledge***

Earth Science Collaboratory



Why is sharing important?

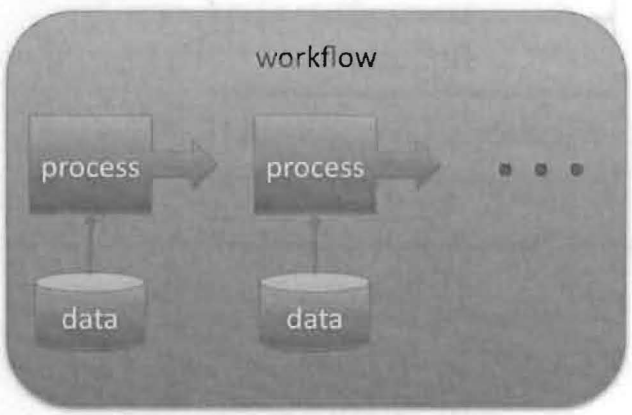
- Knowledge *about* data analysis is not well distributed in the research community
  - Data are often difficult to handle *correctly*
    - e.g., proper quality handling
  - Tools are underutilized in the community
  - Powerful tools have steep learning curves
- Most analysis results remain out of sight
  - only the most salient results are published
  - Negative results are rarely published

What should we share?

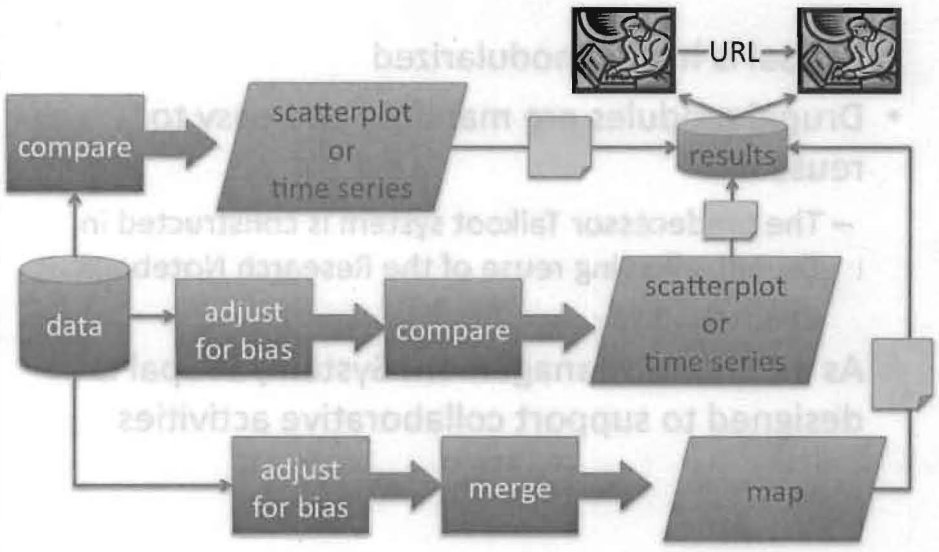
Sharing Spheres

Context is critical in knowledge sharing

result context = input data + tools + workflow + annotation



The Aerostat project supports collaborative analysis of remote sensing aerosol data



GSocial (Social Giovanni)

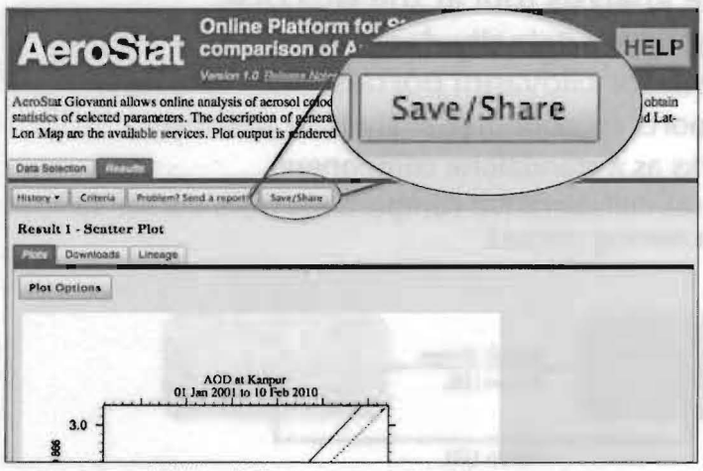
- Aerostat is built on Giovanni, a server-side science analysis tool at the GES DISC
- GSocial was originally designed to be a sharing platform for Giovanni portals (like Aerostat)
  - Supports collaborative analysis by scientists
  - Works as a standalone component
  - Reuses collaborative components from earlier Talkoot data mining project

Drupal 6 forms the basis for GSocial

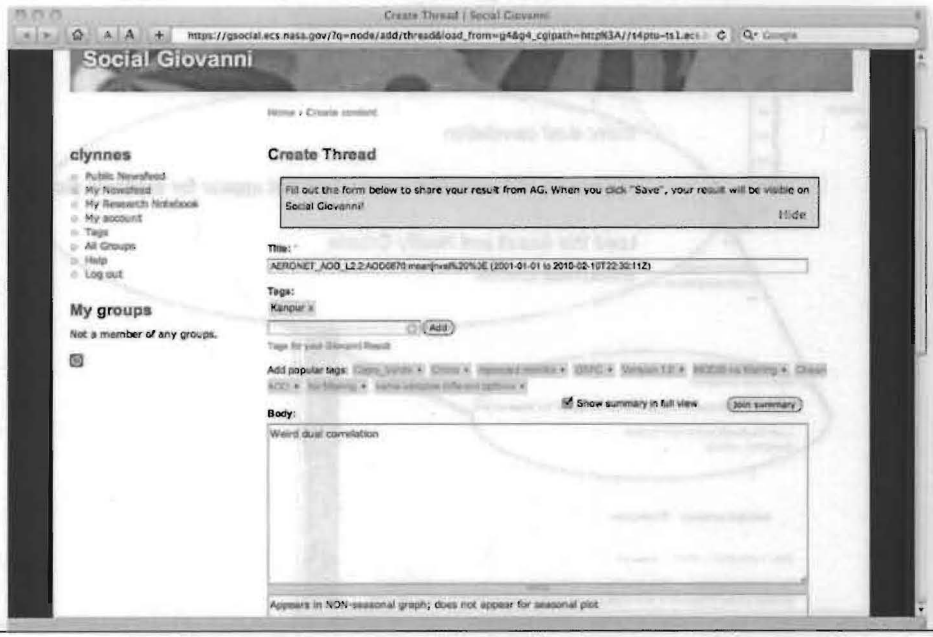
- Drupal is highly modularized
- Drupal modules are manifold and easy to reuse
  - The predecessor Talkoot system is constructed in Drupal, allowing reuse of the Research Notebook module
- As a Content Management System, Drupal is designed to support collaborative activities

Saving / Sharing Results

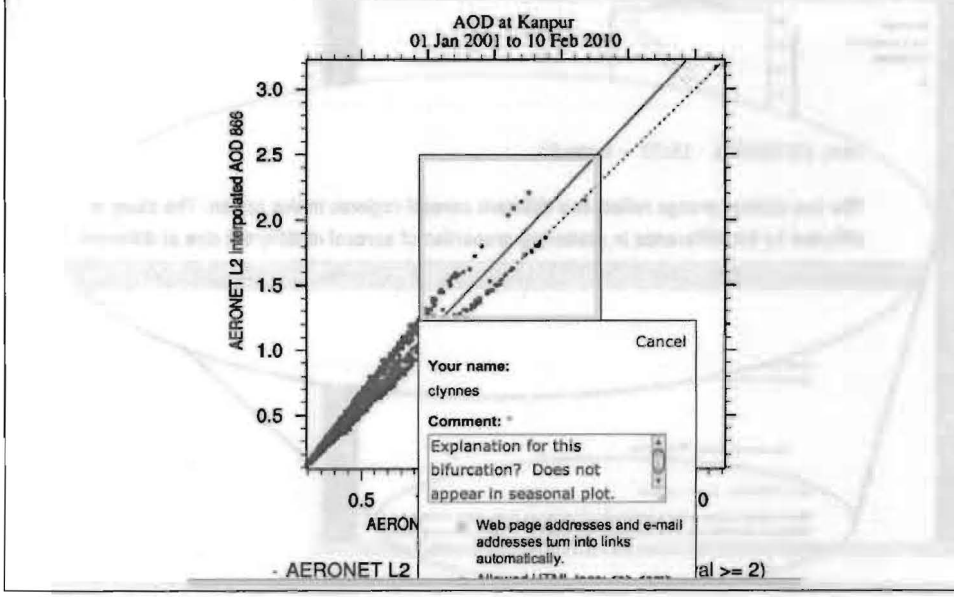
- Save = Share with future self



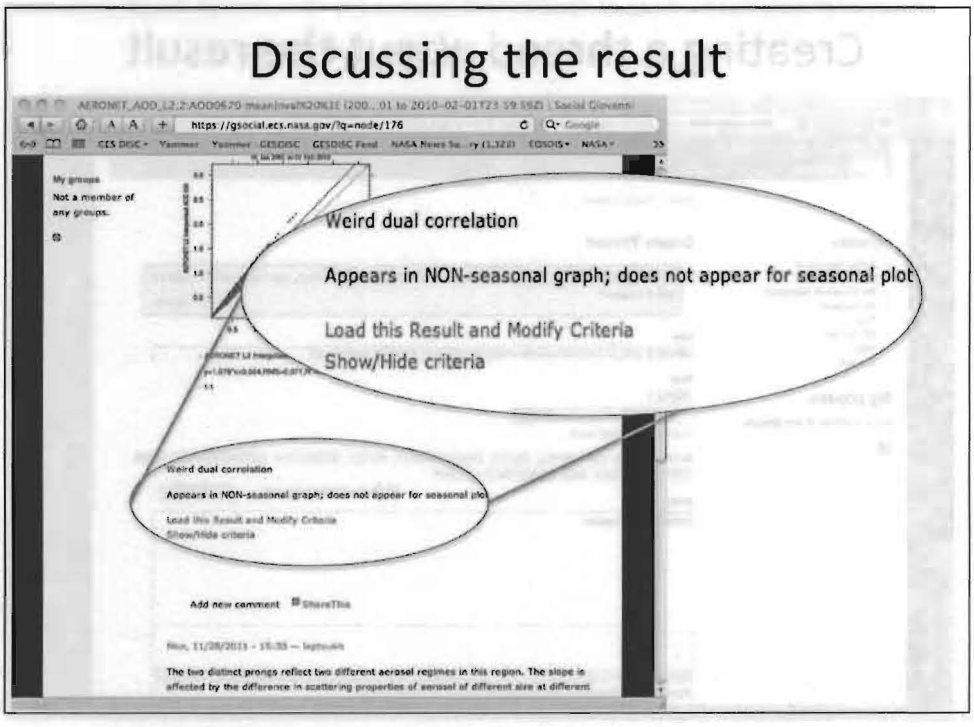
Creating a thread about the result



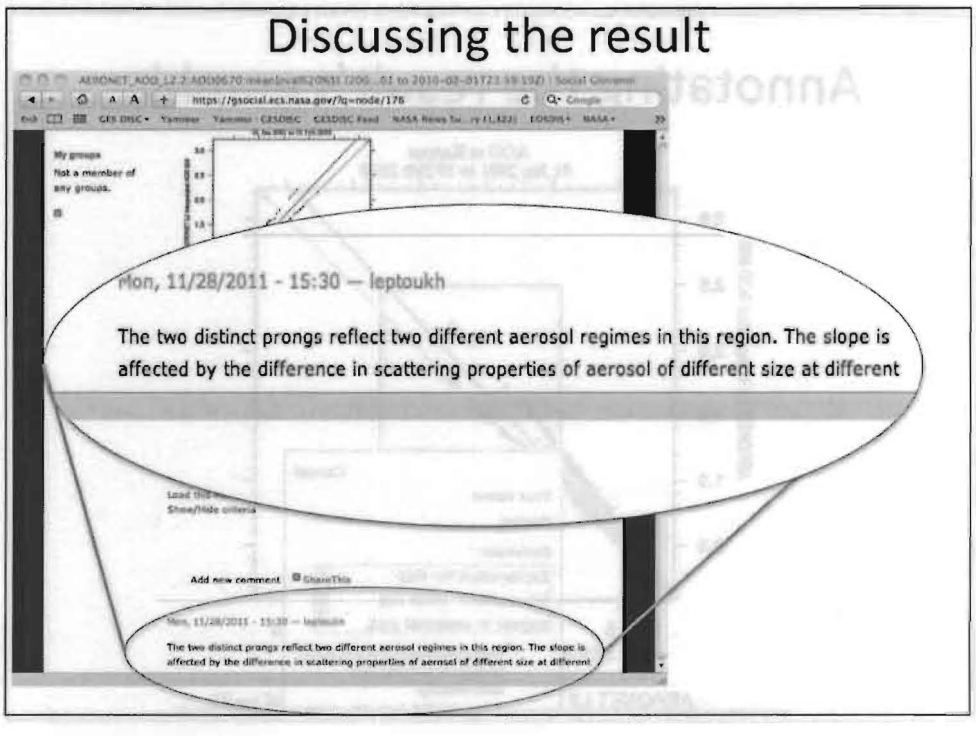
Annotating the result's graphic

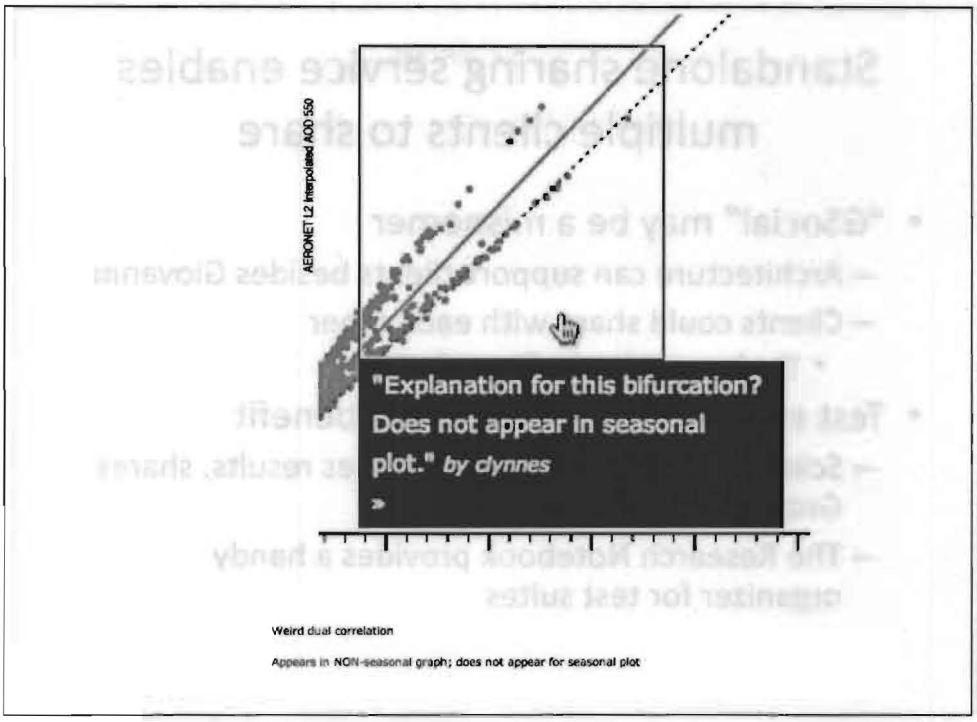


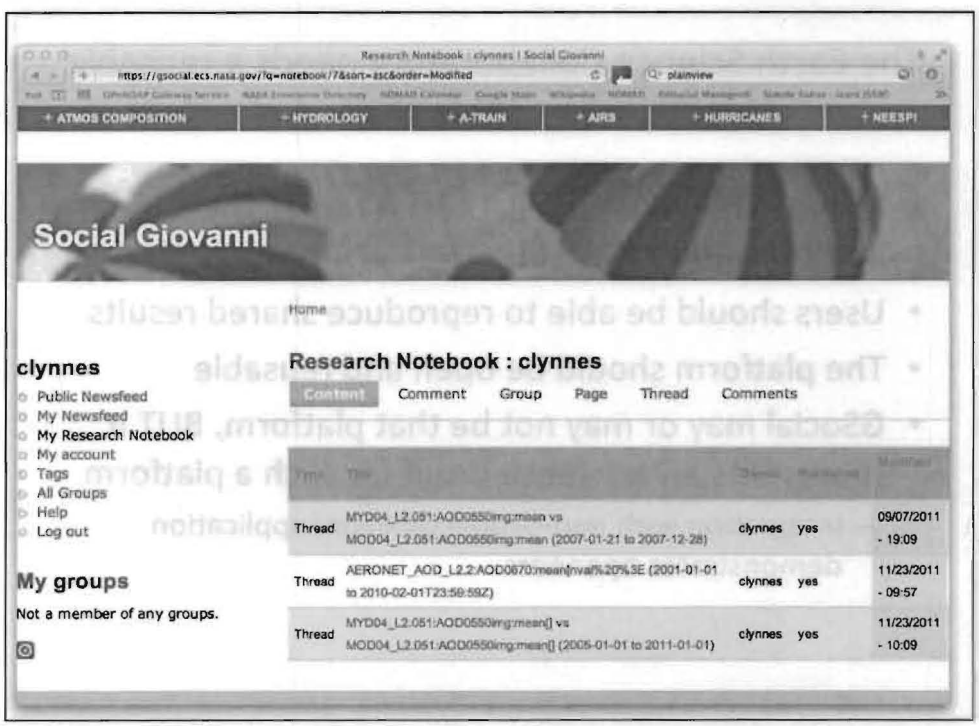
Discussing the result



Discussing the result




AERONET L2 Interpolated AOD 550
"Explanation for this bifurcation? Does not appear in seasonal plot." by clynnes
»
Weird dual correlation
Appears in NON-seasonal graph; does not appear for seasonal plot


Research Notebook : clynnes | Social Giovanni
https://gsocial.ecs.nasa.gov/?q=notebook/7&sort=asc&order=Modified
plainview
+ ATMOS COMPOSITION
+ HYDROLOGY
+ A-TRAIN
+ AIRS
+ HURRICANES
+ NEESPI
Social Giovanni
Home
clynnes
Public Newsfeed
My Newsfeed
My Research Notebook
My account
Tags
All Groups
Help
Log out
My groups
Not a member of any groups.
Research Notebook : clynnes
Content
Comment
Group
Page
Thread
Comments
Thread
MYD04_L2.051:AOD0550img:mean vs MOD04_L2.051:AOD0550img:mean (2007-01-21 to 2007-12-28)
clynnes
yes
09/07/2011 - 19:09
Thread
AERONET_AOD_L2.2:AOD0670:mean[nval%20%3E (2001-01-01 to 2010-02-01T23:59:59Z)
clynnes
yes
11/23/2011 - 09:57
Thread
MYD04_L2.051:AOD0550img:mean[] vs MOD04_L2.051:AOD0550img:mean[] (2005-01-01 to 2011-01-01)
clynnes
yes
11/23/2011 - 10:09

Standalone sharing service enables multiple clients to share

- "GSocial" may be a misnomer
  - Architecture can support clients besides Giovanni
  - Clients could share with each other
    - The key may be the "Rerun" URL
- Test support is an unexpected benefit
  - Scientist runs workflow, annotates results, shares Gsocial URL with engineers
  - The Research Notebook provides a handy organizer for test suites

The Earth Science Collaboratory needs a reusable social platform to enable sharing of results

- Results should be traceable back to all the data and tools used therein
- Users should be able to reproduce shared results
- The platform should be open and reusable
- GSocial may or may not be that platform, BUT it represents an existence proof for such a platform
  - Integration with non-Drupal Giovanni application demonstrates openness