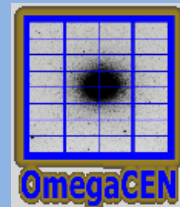




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Tutorial, Leiden 18-20 August 2008





Tutorial, Leiden August 2008

## **Introduction**

Gijs Verdoes Kleijn

OmegaCEN / Kapteyn Institute

Groningen

# Astronomical Wide-field Imaging System for Europe

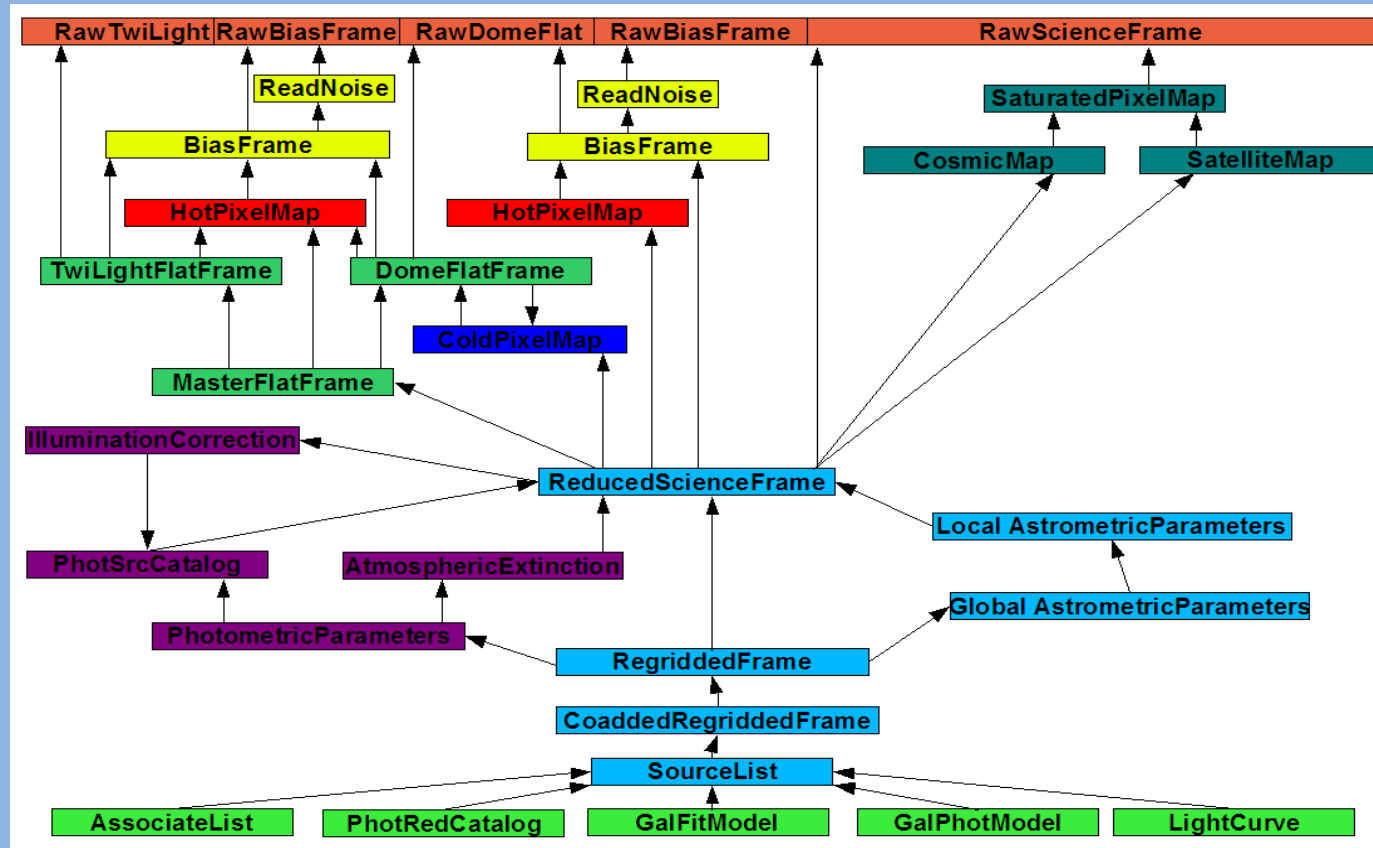
- Tutors
  - Ewout Helmich
  - John McFarland
  - Gijs Verdoes Kleijn
  - Erik Deul

# Main objective Astro-WISE A-to- $\Omega$ Survey Environment

- For astronomical surveys facilitate:
  - Handling
  - Calibration
  - Quality control
  - Pipelining
  - User tuned research
  - Archiving
  - Disseminating
- All collaborators working in same environment:
  - **WHERE EVER** they & the hardware+software are
  - **WHAT EVER** kind of data and size

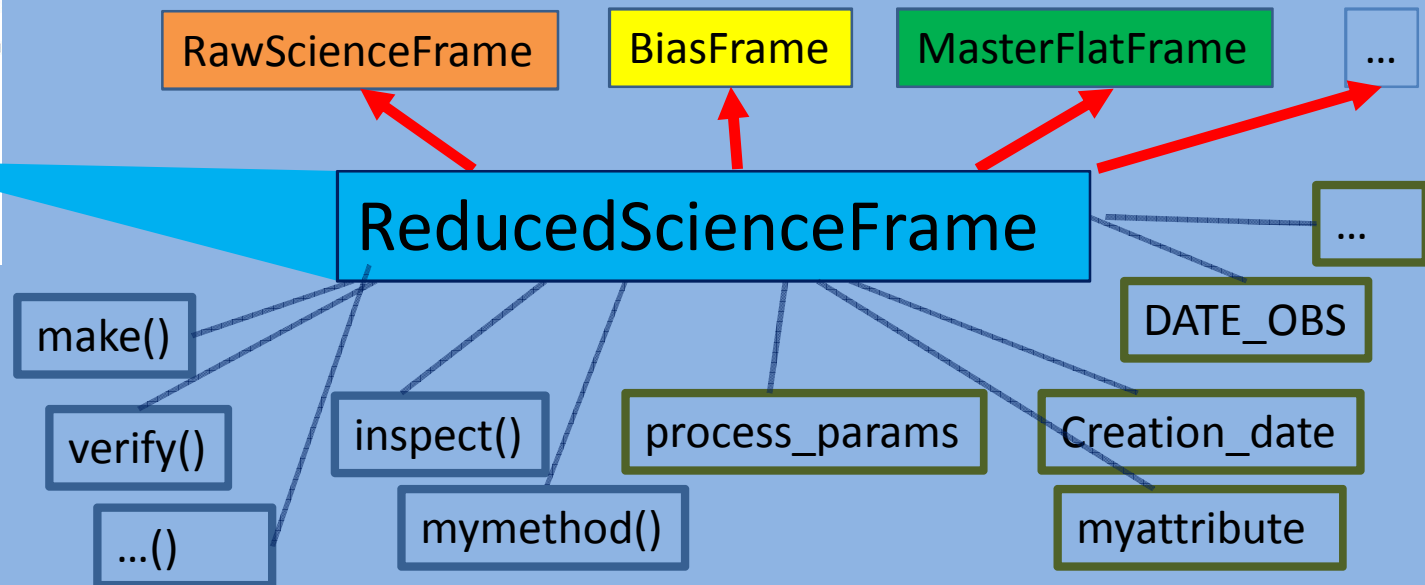
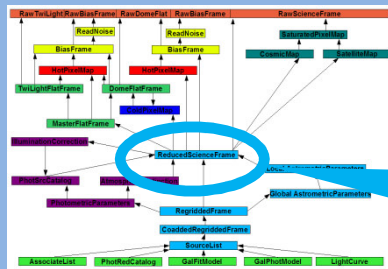
# The Astro-WISE paradigm

## TARGET diagram: “raw to redshifts”



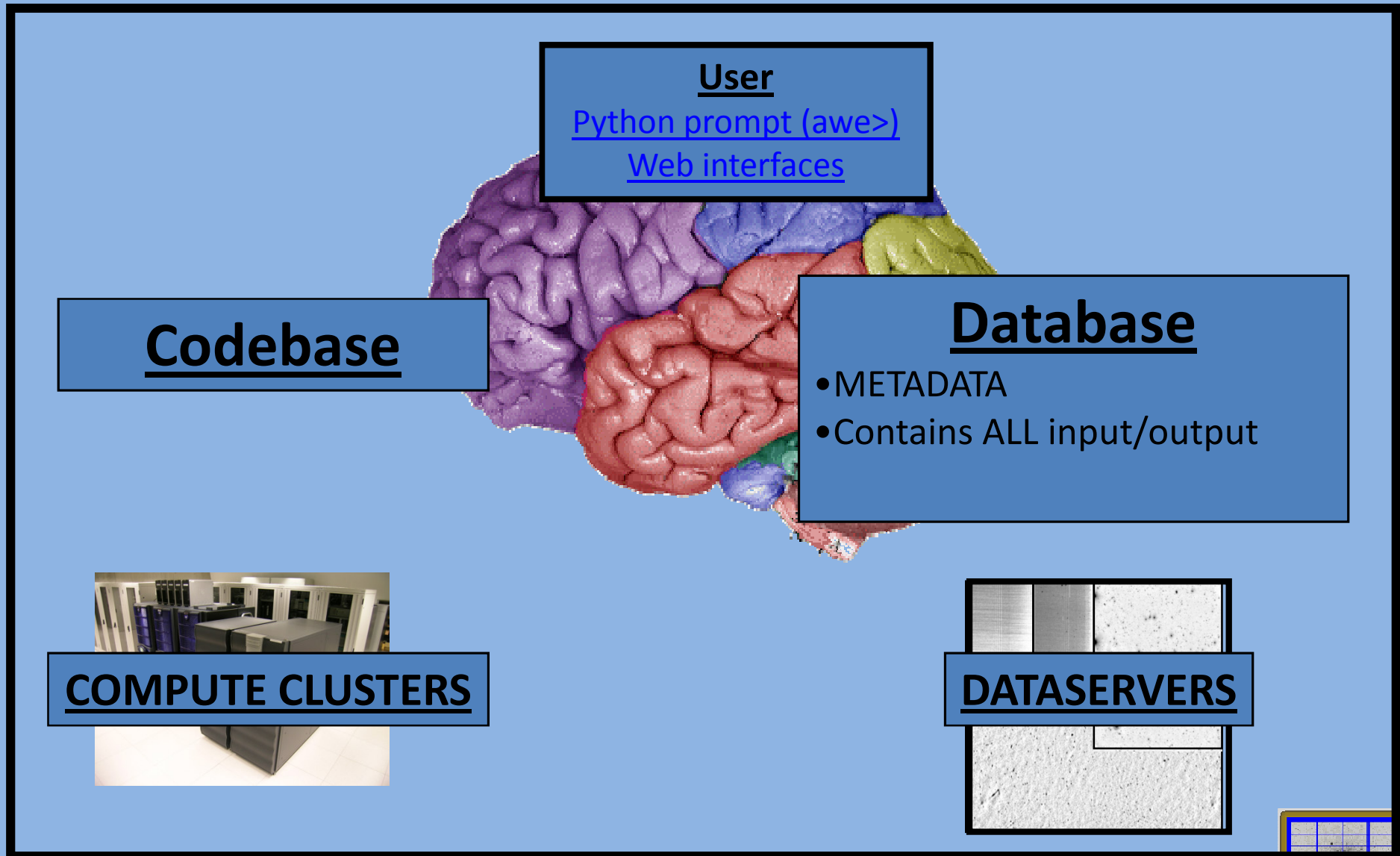
...and “redshifts to raw”

# Classes: Astro-WISE's building blocks

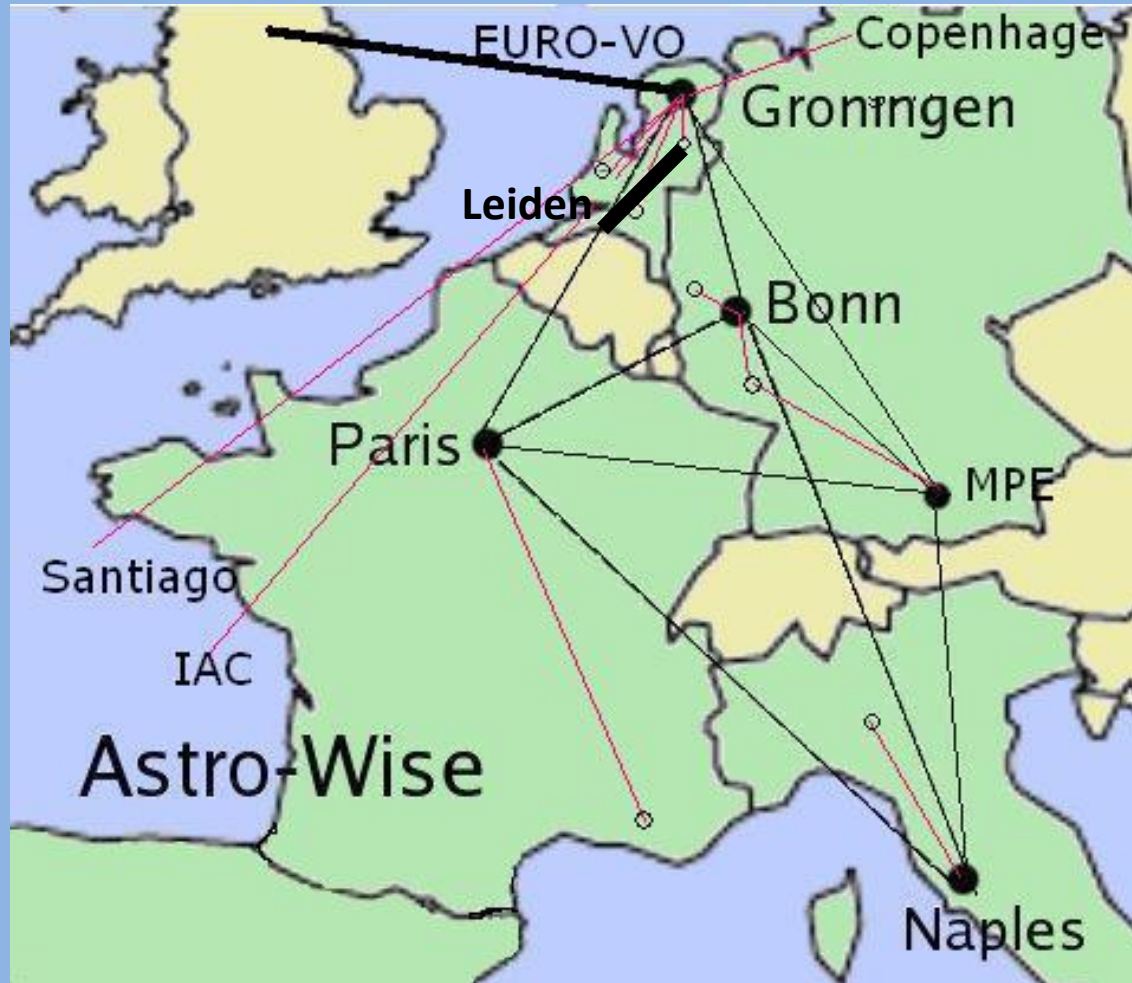


- Classes: building blocks for objects, tasks, recipes
  - persistency: stored in database
  - hierarchy
- The pros of freedom versus the pros of standards:  
MOLP vs Surveys

# The *Astro-Wise Environment*



# The federated **Astro-Wise** *E*nvironment



# Paradigm in action 1: workflow tracking

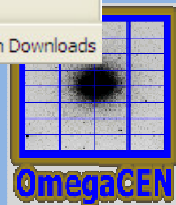
The screenshot shows a web browser window with the URL `http://dbview.astro-wise.org/dbview.py?Queryselect=Q_pyobjview&Querycat=CoaddedRegriddedFrame&F`. The browser's address bar and menu bar are visible. Below the browser, there is a navigation bar with tabs: [SET context](#), [index of tables](#), [raw science](#), [raw calibration](#), [reduced calibration](#), [reduced science](#), [source lists](#), and [HOME](#). A sub-tab [Context in separate window](#) is also present.

Below the navigation bar, there is a section titled [uplinks from CoaddedRegriddedFrame](#). A dropdown menu is set to "show all" and a "submit" button is next to it. The dropdown text indicates it shows "[attributes, values, links and table(s) of linked objects] 1".

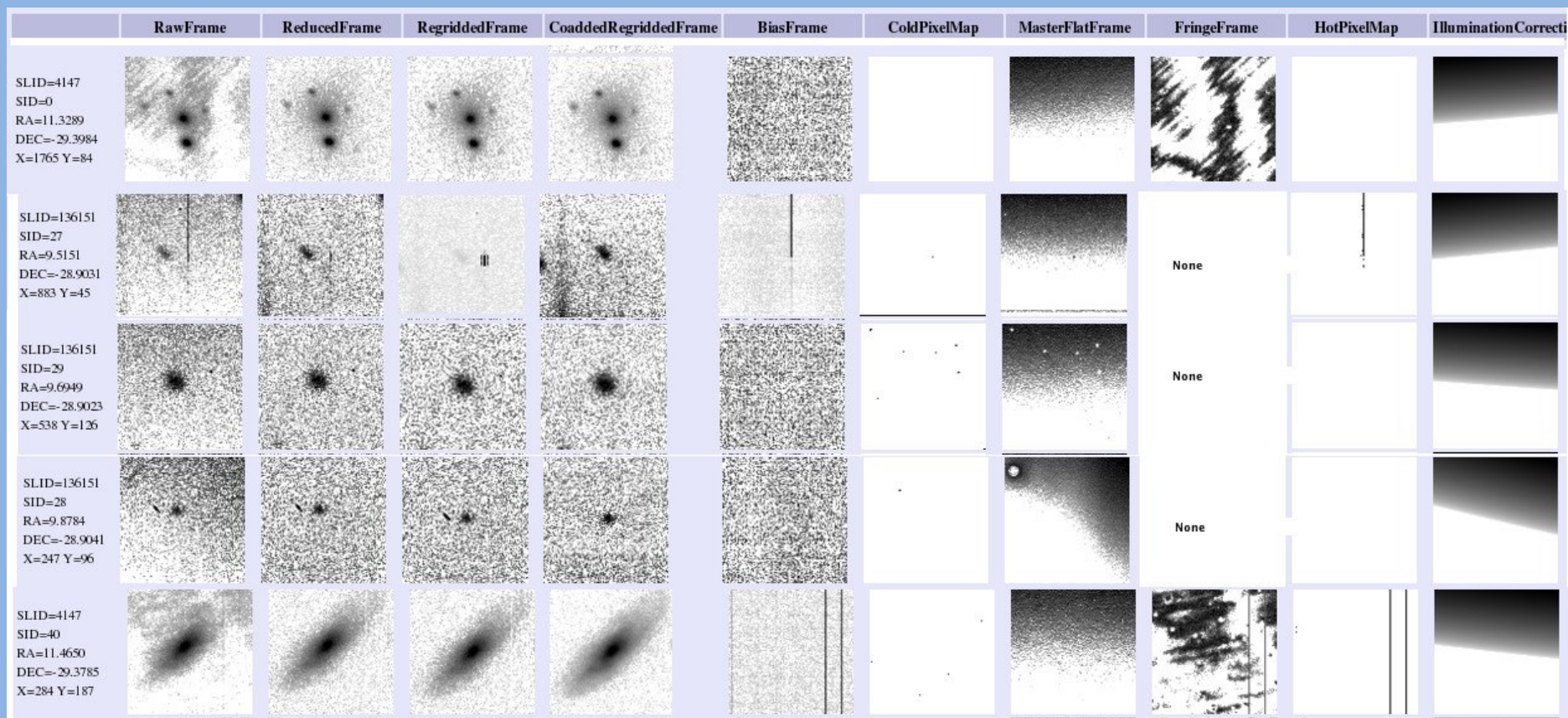
The main content area displays the details for the **Main-Object : CoaddedRegriddedFrame**. A [QualityView](#) button is visible. The object's attributes are listed in a table-like format:

astrom.CRVAL2	9.47102
astrom.CRVAL1	187.712769
NAXIS1	10720
NAXIS2	10739
OBJECT	P1 Ha 300s
ZERPNT	0.0
ZPNTERR	0.0
ccds	(, ['A5382-1-7', 'A5506-4', 'A5383-17-7', 'A5530-3'])
creation_date	2008-04-28 13:09:16
filename	<a href="#">Sci-PHERAUDEAU-WFC-----197---Coadd---Sci-54584.5429569-82d794cb211cb2b7f79aa80888e08442dfb32cfa.</a>
globalname	NULL
is_valid	1
process_status	1
psf_radii_per_cod	((, ), [1.6190226554870599, 1.6117556571960401, 1.66072216033936, 1.6261998176574699])
psf_radius	1.64451150894
quality_flags	0
----->	<a href="#">['regridded frames1']</a>
+astrom	[level : 2] Astrom
- CD1_1	-5.555555638e-05
- CD1_2	0.0
- CD2_1	0.0
- CD2_2	5.555555638e-05
- CRPIX1	3491.0

The browser's status bar at the bottom shows "Done" and several RSS feeds: "Baby Bl...", "What's Happening: Cosmic Suburbia is a Bet...", "NASA Unveils Cosmic Images Book in Braille f...", "Even Thin Galaxies Can Grow Fat Black Holes", and "What's Happening: One Million Downloads".



# Paradigm in action 2: visualizing extreme data lineage



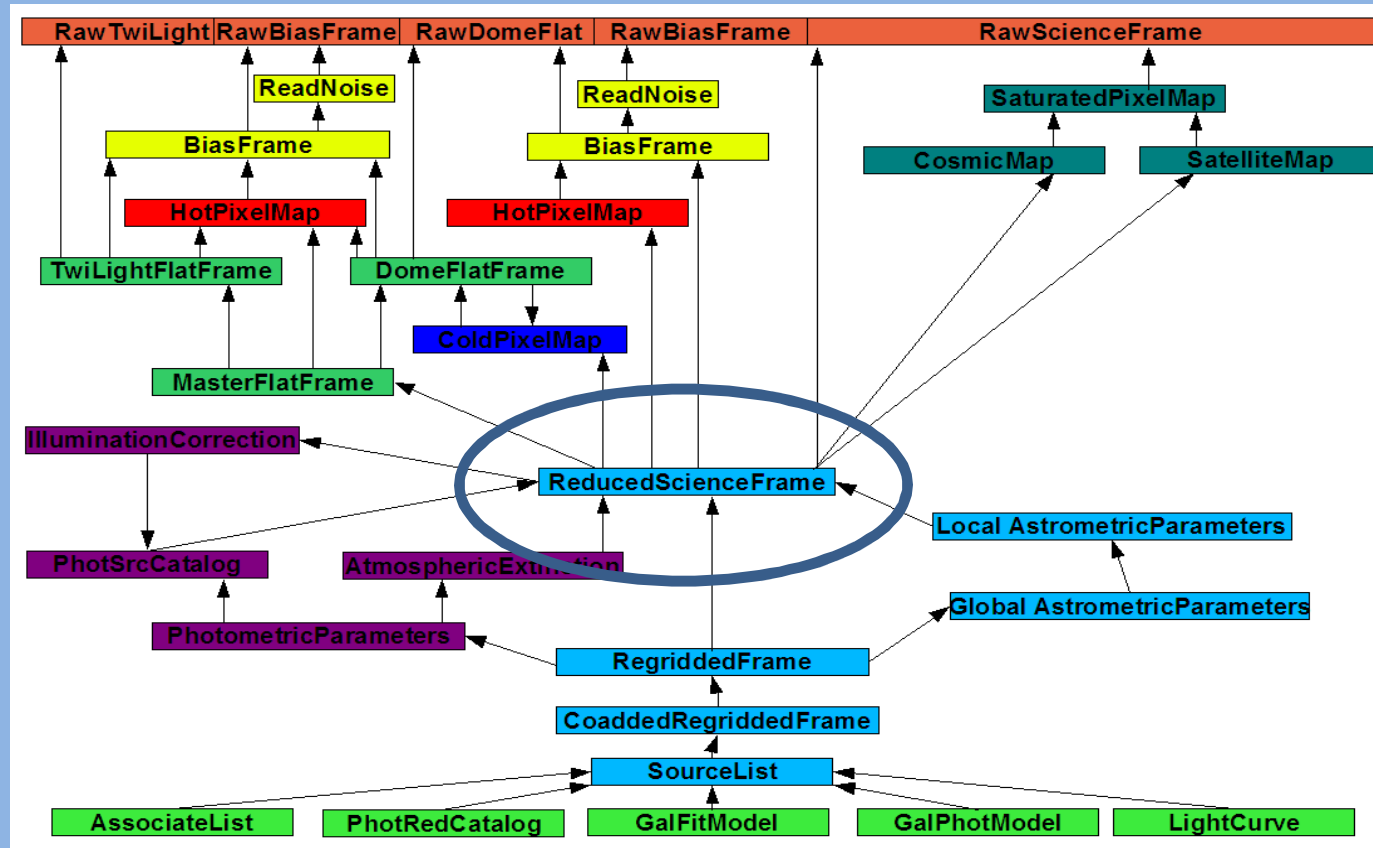


# What can be ingested into Astro-WISE

- Imaging: 15 instruments currently:
  - Optical: [WFI@2.2m](#), MDM8K@MDM, ACS@HST\*, MEGACAM@CFHT, OCAM@VST, SUPRIMECAM@SUBARU, LBCBLUE/RED@LBT, MONICA@WENDELSTEIN, WFC@INT, PDS@ESO
  - Infrared: WFCAM@UKIRT, ISAAC\*\*
  - Radio: WENSS@WSRT\*, LOFAR@LOFAR\*\*
- Tabular data in general

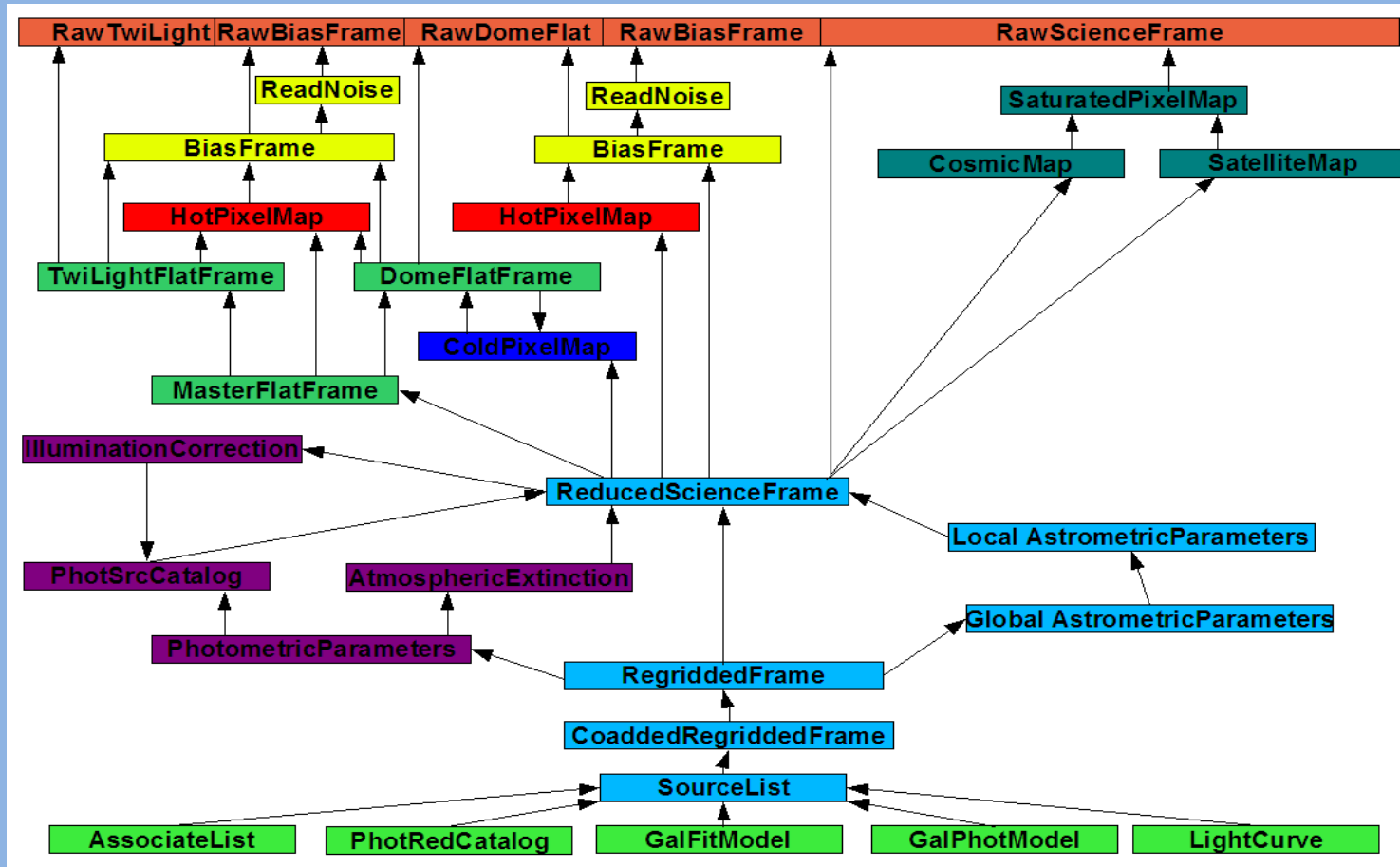
# The Astro-WISE paradigm

## TARGET diagram: “raw to redshifts”



...and “redshifts to raw”

# What can be created in Astro-WISE.....



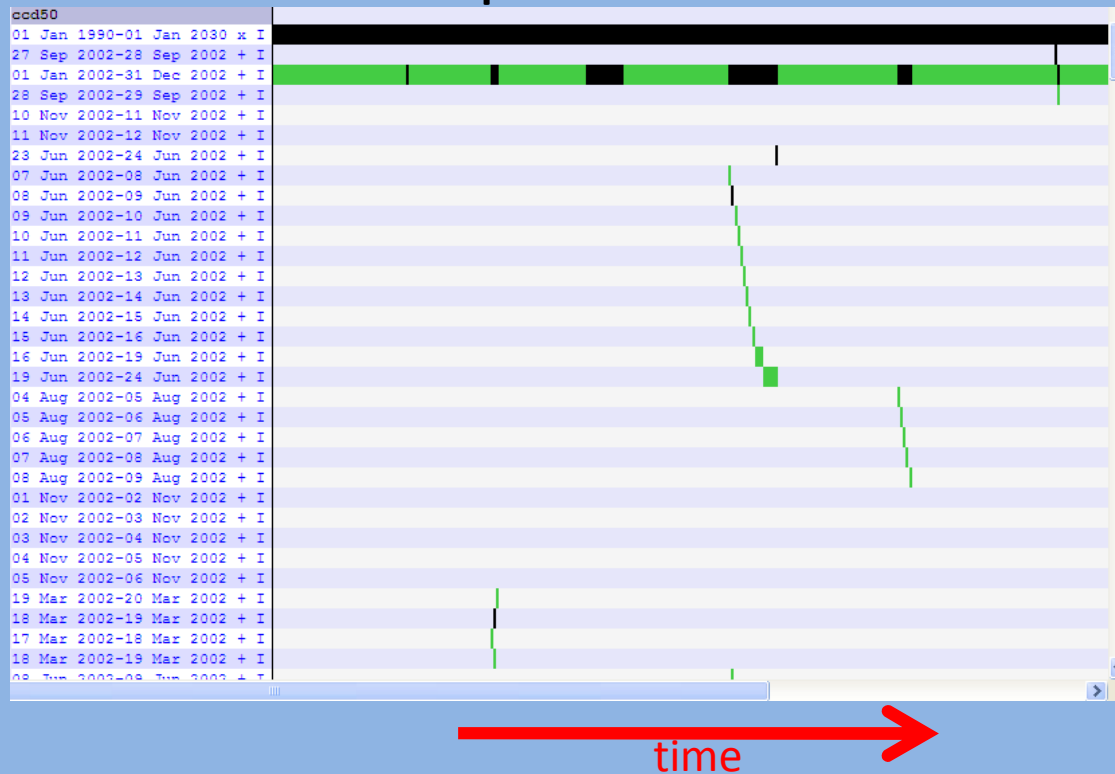
...and also retrieved (fits/csv/html/png/xml/python pickle ...)

# Ordering the sea of data 1

- Projects, privileges and context
  - Data subdivided into projects
    - Public projects: members are all Astro-WISE users (including anonymous)
    - Private projects: members are subset of Astro-WISE users
    - within a project each object has a visibility privilege
      1. only visible for the creator
      2. visible for everyone in the project
      3. visible for whole Astro-WISE
      4. visible for the whole world
      5. visible in the virtual observatory as well
    - Context= project PLUS public data from all projects

# Ordering the sea of data 2

- Default behavior: 'Newest version is best'
- Calibration timestamps



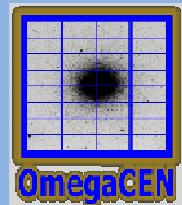
# Tutorial programme: hands-on

Monday 18 August					
10:00-10:45	Astro-WISE introduction: why and how to use it	45min	Verdoes	.pdf	.ppt
10:45-11:15	Coffee / Tea	30min			
11:15-12:30	Tutorial hands-on session	75min		<a href="#">.html</a>	
12:30-13:30	Lunch	60min			
13:30-16:00	Tutorial hands-on session	150min		<a href="#">.html</a>	
16:00-16:45	Day review and feedback	45min	plenary		
Tuesday 19 August					
09:30-10:15	Tutorial lecture: astrometry, data ingestion, and more	45min	McFarland	.pdf	.ppt
10:15-10:45	Tutorial hands-on session	30min		<a href="#">.html</a>	
10:45-11:15	Coffee / Tea	30min			
11:15-11:45	Demo Astro-WISE web services	30min	Helmich / McFarland		
11:45-12:45	Web services hands-on session	60min			
12:45-14:00	Lunch	75min			
14:00-16:00	Hands-on: your own dataset	120min			
16:00-16:45	Day review and feedback	45min	plenary		
Wednesday 20 August					
09:30-10:00	Tutorial lecture: adapting code	30min	Helmich	.pdf	.ppt
10:00-10:45	Hands-on: your own dataset	45min			
10:45-11:15	Coffee / Tea	30min			
11:15-12:30	Hands-on: your own dataset	75min			
12:30-13:30	Lunch	60min			
13:30-16:00	Hands-on: your own dataset	150min			
16:00-17:00	Tutorial review and where to go from here	60min	plenary		
17:00	END OF TUTORIAL				

- Ultimate goal tutorial
  - Launch Astro-WISE user community in Leiden
  - Erik central figure: local Astro-WISE contact



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# LET'S DO IT



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