GAIA I

CATALOGS OF STARS

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- Catalogs
- Photometric basement
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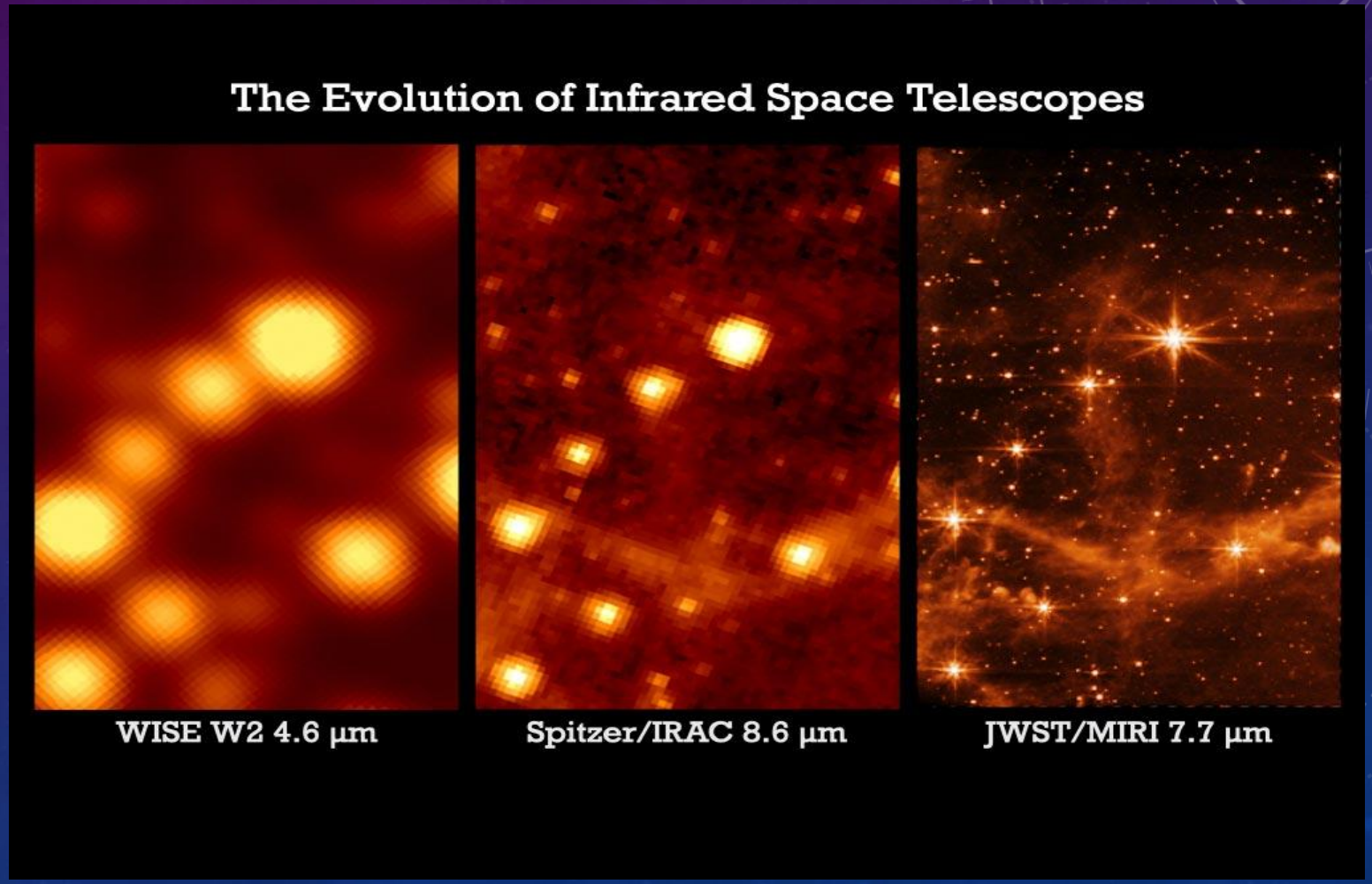
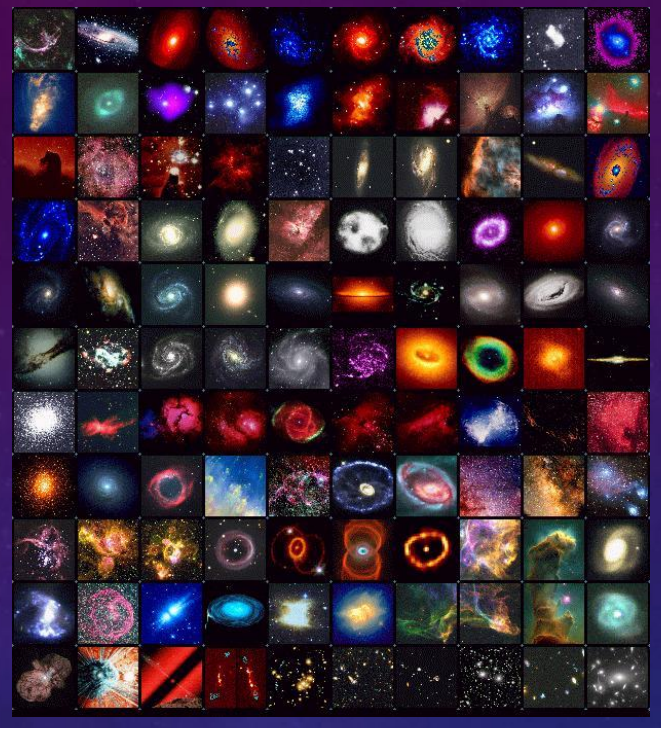
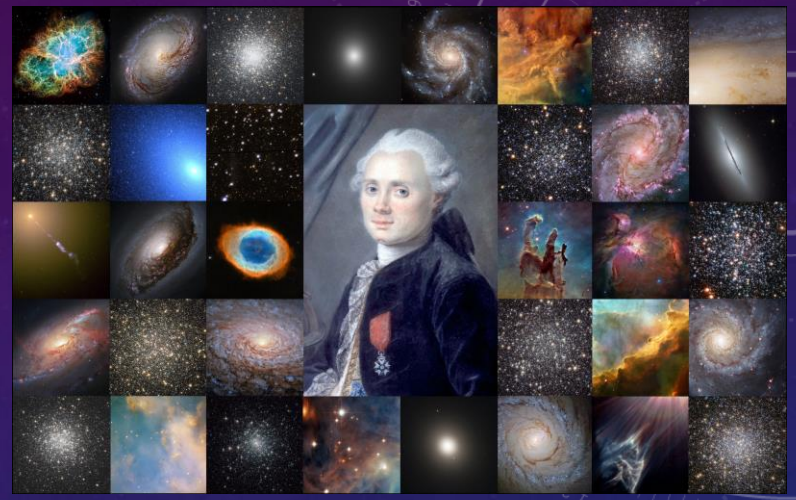
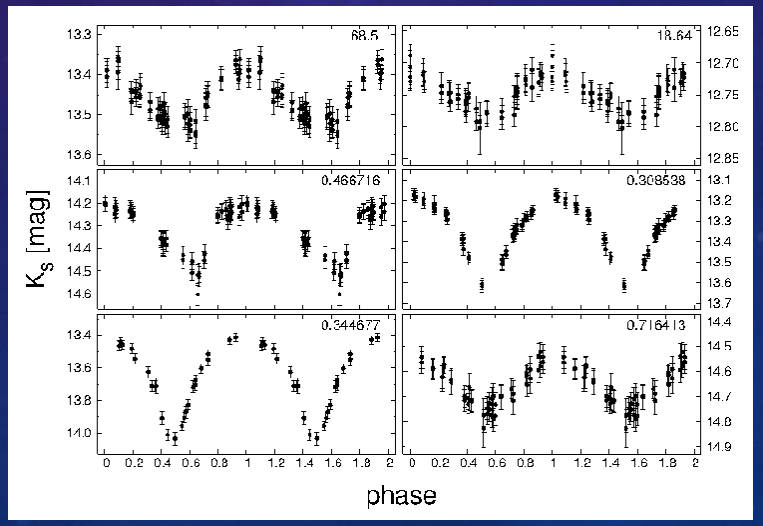


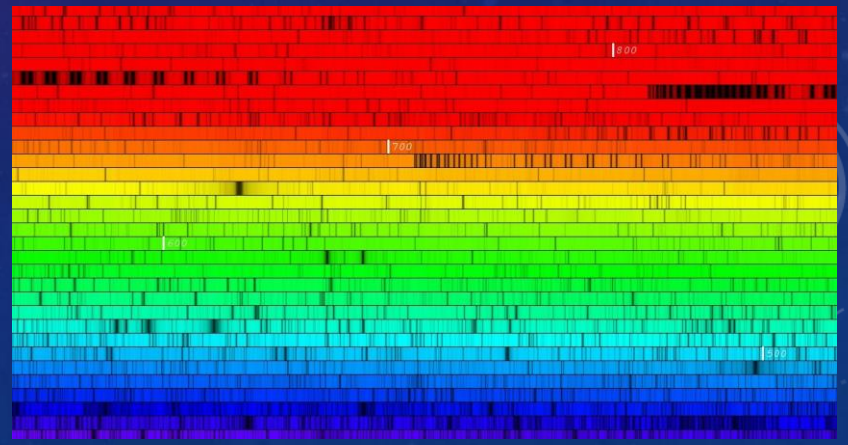
CATALOGS

- Types
- Usages
- Gaia, SDSS, 2MASS, …







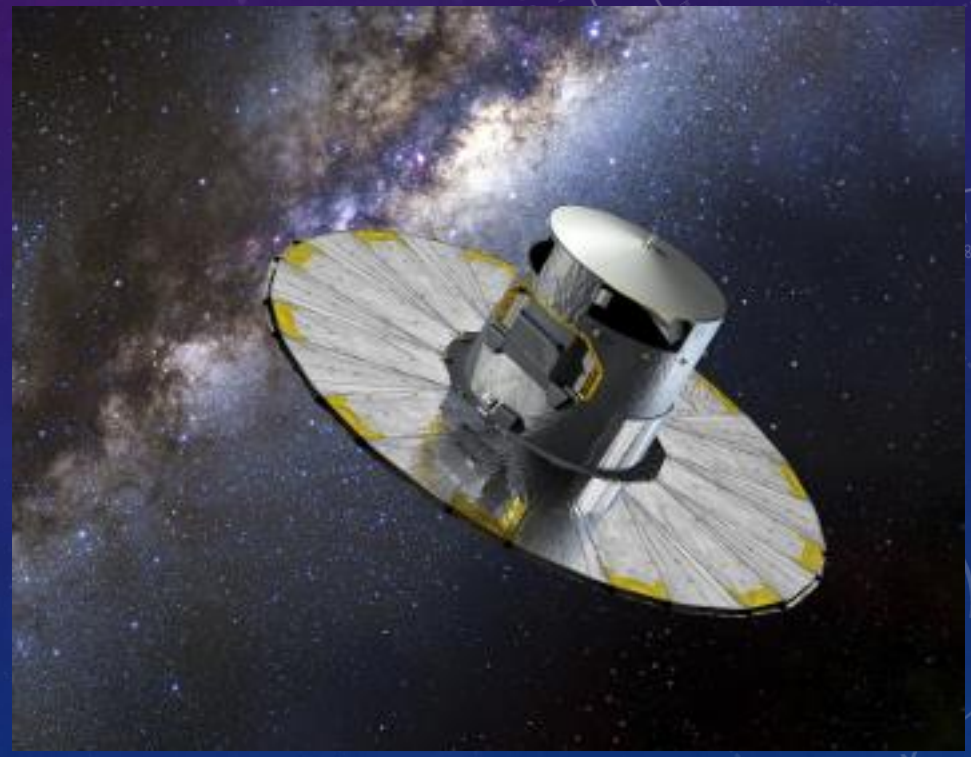


PHOTOMETRIC SYSTEM

Filter Letter	Effective Wavelength Midpoint λ_{eff} for Standard Filter[2]	Full width at half maximum[2] [c] (archetypal Bandwidth) ($\Delta\lambda$)[d]	Variant(s)	Description
Ultraviolet				
U	365 nm	66 nm	u, u', u*	"U" stands for ultraviolet.
Visible				
B	445 nm	94 nm	b	"B" stands for blue.
G[3]	464 nm	128 nm	g'	"G" stands for green.
V	551 nm	88 nm	v, v'	"V" stands for visual.
R	658 nm	138 nm	r, r', R', R_c, R_e, R_j	"R" stands for red.
Near-Infrared				
I	806 nm	149 nm	i, i', I_c, I_e, I_j	"I" stands for infrared.
Z	900 nm[4]		z, z'	
Y	1020 nm	120 nm	y	
J	1220 nm	213 nm	J', J_s	
H	1630 nm	307 nm		
K	2190 nm	390 nm	K Continuum, K', K_s, K_{long}, K^8, nbK	
L	3450 nm	472 nm	L', nbL'	
Mid-Infrared				
M	4750 nm	460 nm	M', nbM	
N	10500 nm	2500 nm		
Q	21000 nm[5]	5800 nm[5]	Q'	

GAIA

- ESA’s space telescope lunched at 2013
- Aimed to create the best 3D map of MW
- Observed more than 1Bn stars and 2Bn objects
- Three major and 1 minor catalogs have been released



GAIA: ARCHIVE

- Home
- Search
  - Basic Search
  - ADQL
  - Query Results
- Visualization
- Help
  - Documentation
  - Data Model
  - Papers
- Other catalogs

A RESEARCH APPROACH

- Start reading an article
- Use the sources and specially the links
- Find your way in other articles and links
- Try to derive the main article figures and results
- Try to improve what they have done
- Start a new article

TASK 1

- Get data from 6 different Galactic coordinates with at least 1° and 1000 stars
- Plot each HRD
- Try to correct the extinction
- Plot the results
- Save the results as a database

Hint: Use Gaia DR2 papers and pm me for an accurate distance module.

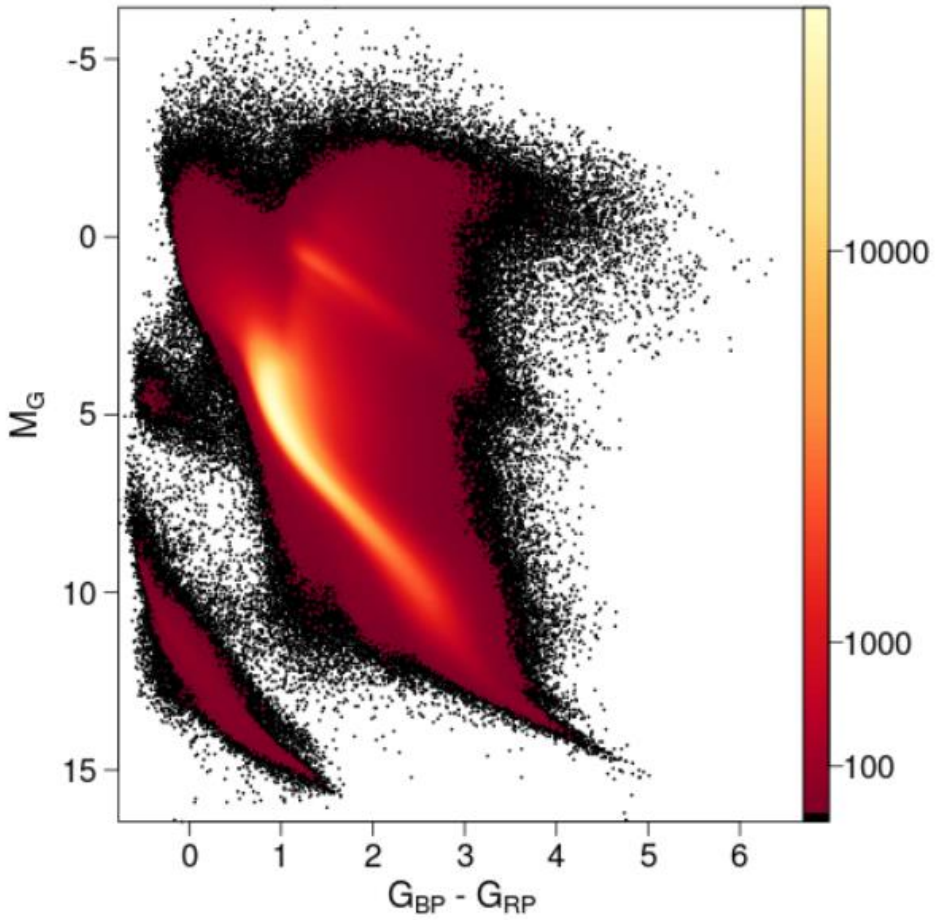


Fig. 1. Full *Gaia* colour-magnitude diagram of sources with the filters described in Sect. 2.1 applied (65 921 112 stars). The colour scale represents the square root of the relative density of stars.