








# **BUFFALO -Ground based data**

## **Summary**

# GCAV -ESO Public Survey (M.Nonino, NIR:Y,J,Ks)

<https://sites.google.com/a/inaf.it/vista-gcav/home>

-  ★ Abell 2744... WFI,MegaPrime,Suprime
-  ★ MACSJ0416 ...Suprime,DECam,Megaprime(Omegacam\*)
-  ★ Abell 370...Suprime,HyperSuprime
-  ★ RXCJ2248...WFI,(Omegacam\*)
- ♣ RXCJ0600...HyperSuprime \*\*
- ♣ WHLJ23...HyperSuprime \*\*
- ♣ RXCJ2211..WFI,Megaprime,Omegacam,Suprime
- ♣ PLCKG287...WFI,Megaprime,DECam,(Omegacam\*)
- ✓ RXCJ1347...Megaprime,WFI,Suprime
- ♣ RXCJ1515..Megaprime,Hypersuprime \*\*, (Omegacam\*)
- ♣ Abell2163
- ♣ PLCKG004.5..Omegacam,Magellan \*\*
-  ♣ ACTCLJ0102..Magellan \*\*
- ♣ Abell 1300..WFI,Suprime,Megaprime,Omegacam
- ♣ SPT-CLJ0254
-  ✓ RXCJ2129
- RCS2J23...Megaprime
-  EMSS0451..Suprime,Megaprime (Anja's)
- ♣ MACSJ0553..Omegacam \*
- ♣ SMACSJ0723..Magellan \*\*

\* GAME (VST, A. Mercurio)

\*\* RELICS

~6-12 hrs/cluster/filter



2010.15318: VR-Commissioning Targets



# GCAV-DR2

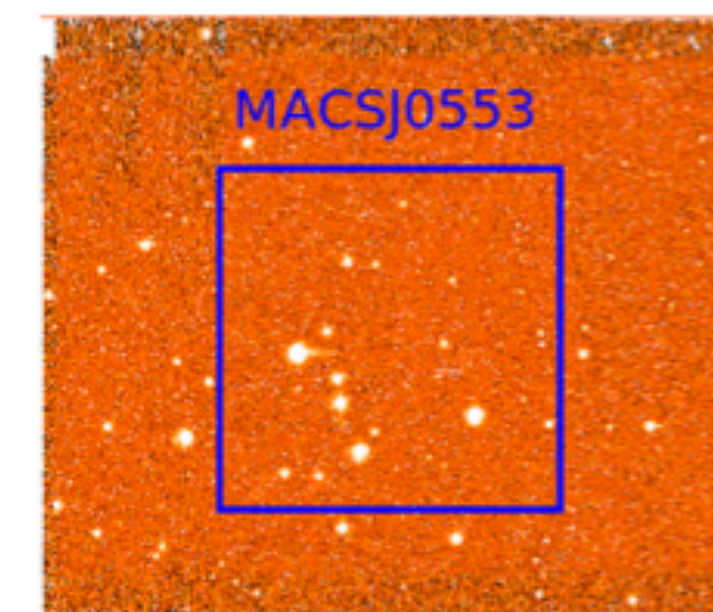
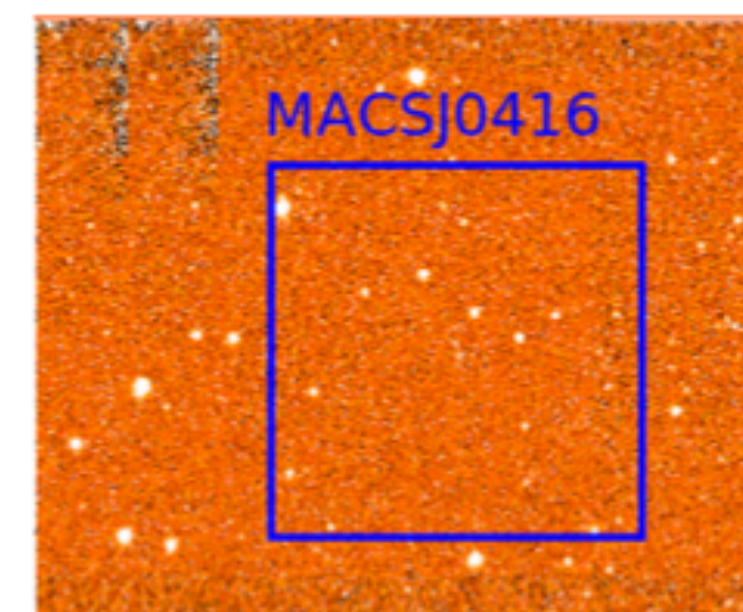
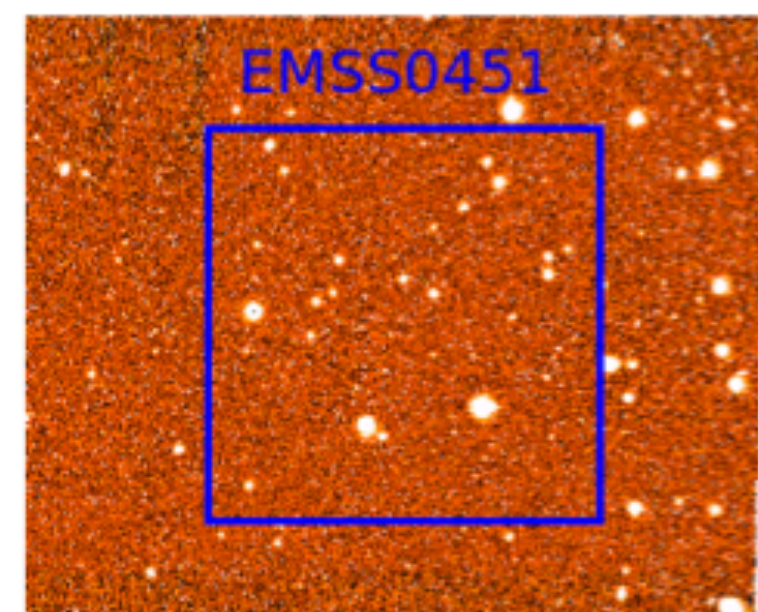
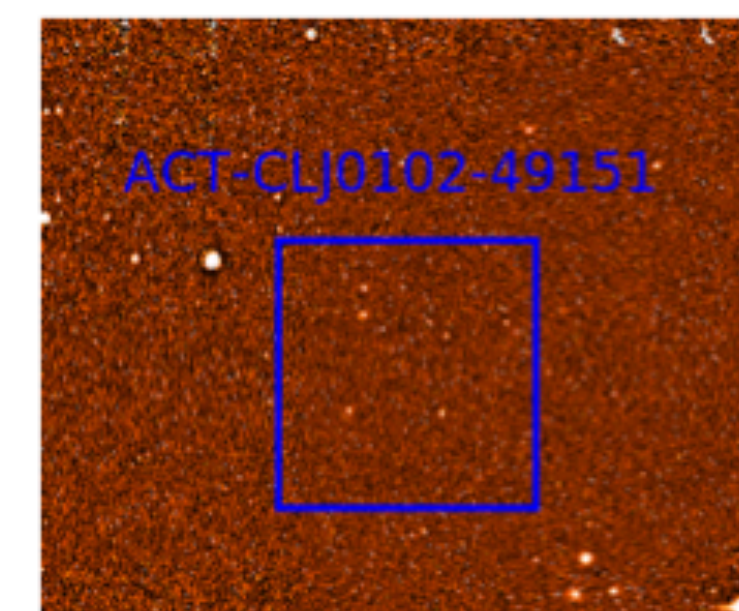
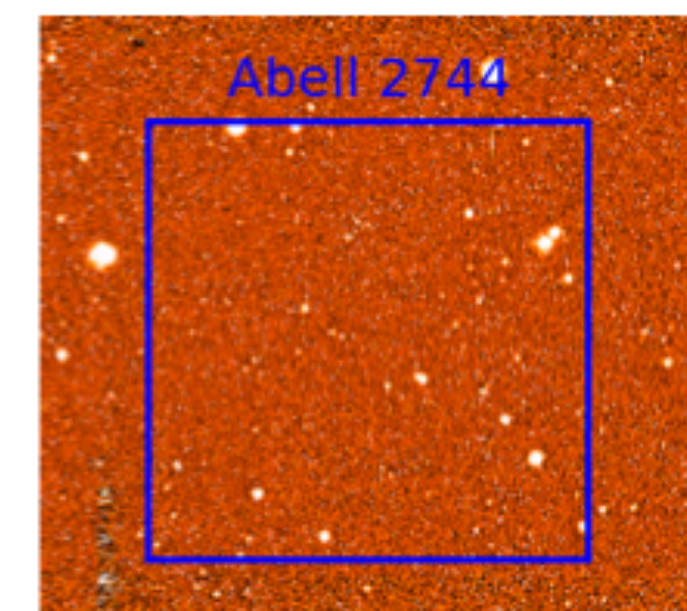
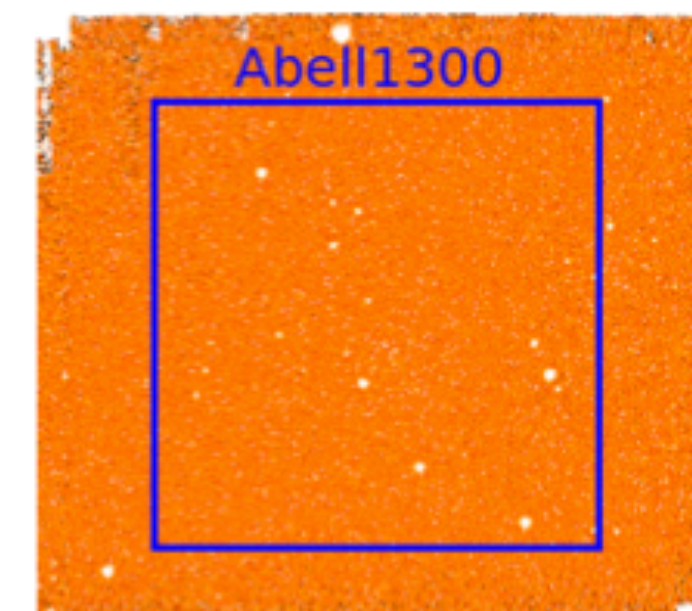
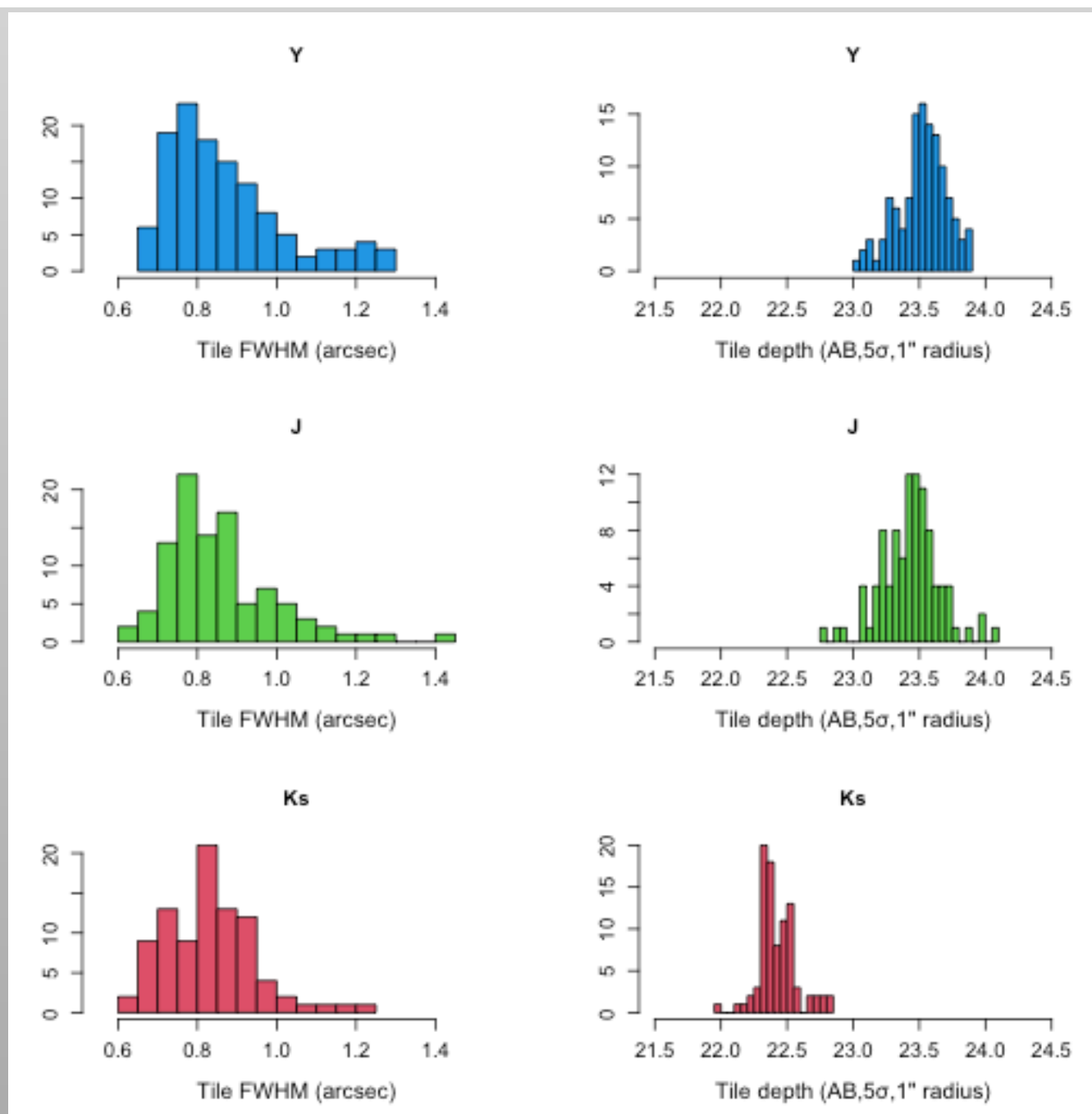
## Second Data Release from the Galaxy Clusters At Vircam (GCAV) ESO VISTA Public Survey

**Published: 08 Dec 2020**

Galaxy Clusters At Vircam ([GCAV](#)) is a survey (programme 198.A-2008, PI M. Nonino) belonging to the second cycle of ESO VISTA Public Surveys. It is aimed at observing 20 massive galaxy clusters covering in total  $\sim 30$  deg<sup>2</sup> in the infrared Y, J, and Ks bands. Those clusters have also been observed in many ground- and space-based programmes (e.g. CLASH, RELICS, HFF/ BUFFALO). The survey will mainly explore galaxy evolution over a wide, and still largely unexplored, diversity of cluster environments.

This second release adds new data of 15 galaxy clusters to the previous DR1. It contains tile images and related source lists from data collected over the time period from October 2016 to March 2020. The tile images reach a typical sensitivity in AB magnitude of  $\sim 23.5$  in Y,  $\sim 23.4$  in J, and  $\sim 22.4$  in Ks. The total volume of the second data release is 1.3TB.

All data are publicly accessible via the [Science Portal](#) or [programmatically](#). More information is available in the accompanying [release documentation](#).



15 Mpc (physical)



Virtual split cluster set in (can be **easily**/**~easily**/**~no** observed from MKO)

*Northern:* **MACSJ0717** & (partly) **MACSJ1149**

*Southern:* **Abell 370**, **Abell 2744**, **MACSJ0416**, **RXCJ2248**

Wide field ( $\geq 30'$  only)

**Abell 370:** Suprime (**B,V,RC,IC,z',...**) - HSC (**z',Y,IB921**)-MegaPrime (**u,g,r,i,z**)-VIRCAM (**Y,J,Ks**)

Wircam (**Y,J,H,Ks,NB**);

**Abell 2744:** Suprime (**B,RC,i',z'**)-MegaPrime (**i**)-Mosaic2(**RC**)-WFI(**MB856-H $\alpha$** -rest-frame)

VIRCAM (**Y,J,Ks**)-Wircam (**Ks**)



**MACSJ0416:** Suprime (**B,Rc,z'**)-MegaPrime (r)-DECam (**u,g,r,i,z**)-  
OmegaCam (**u,g,r,i**)-VIRCAM (**Y,J,Ks**)-Wircam (**J,Ks**)

**RXCJ2248:** WFI(**U,B,V,RC,I**)-OmegaCam(**u,g,r,i**)-VIRCAM(**Y,J,Ks**)

**MACSJ0717:** Suprime(**B,V,RC,IC,z'**,ZR,NB973)-LBC(**SDT-Uspec,V**)  
MegaPrime (**u,g,r**) - Wircam (Y,J,H,**Ks**,IB)

**MACSJ1149:** Suprime (**B,V,RC,Ic,z'**)-HSC(z)-MegaPrime (u,r)-Wircam (J,**Ks**)



Abell 370 MegaPrime u,g - HSC z'-HST f814W BUFFALO coverage

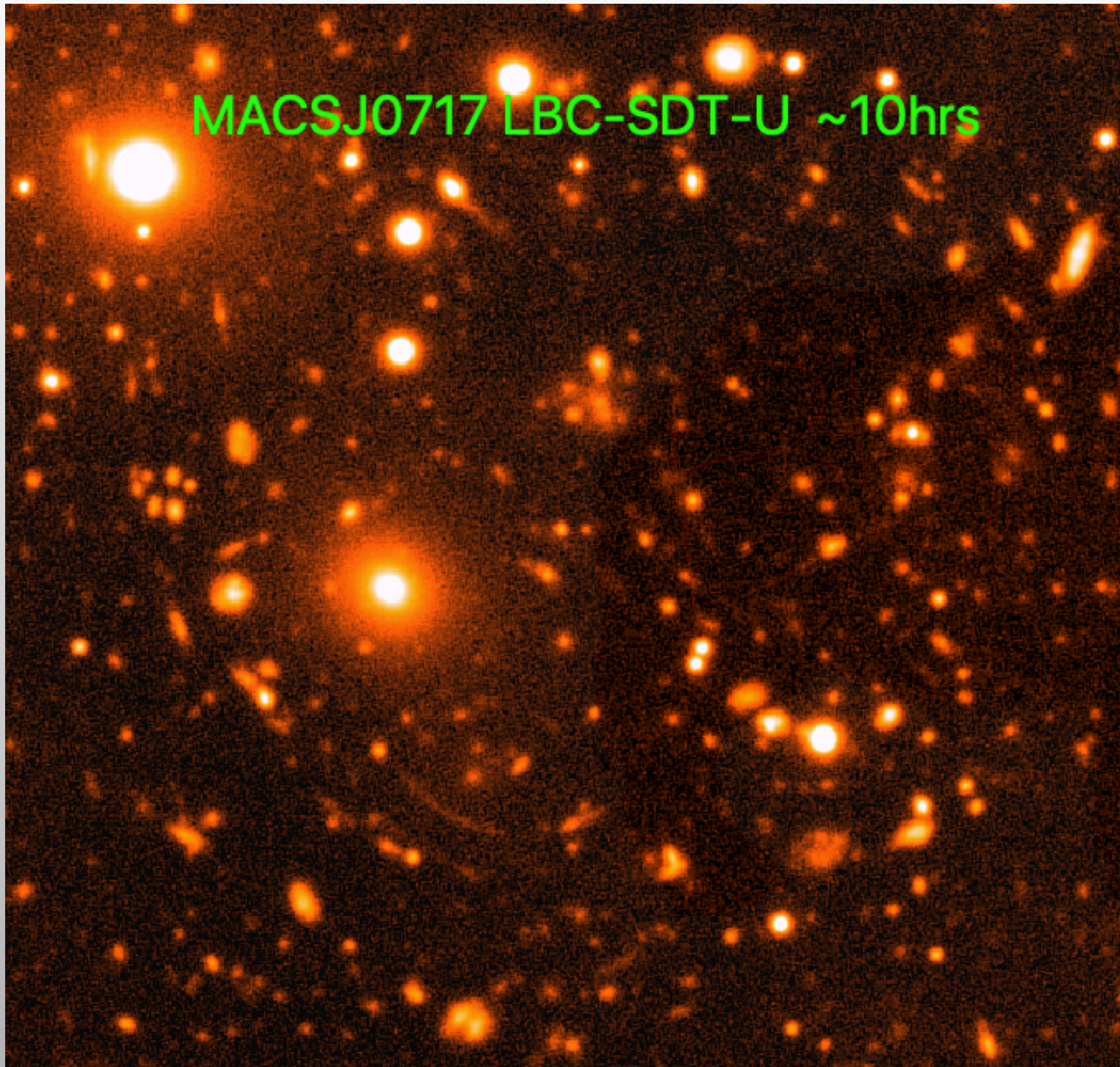


40'

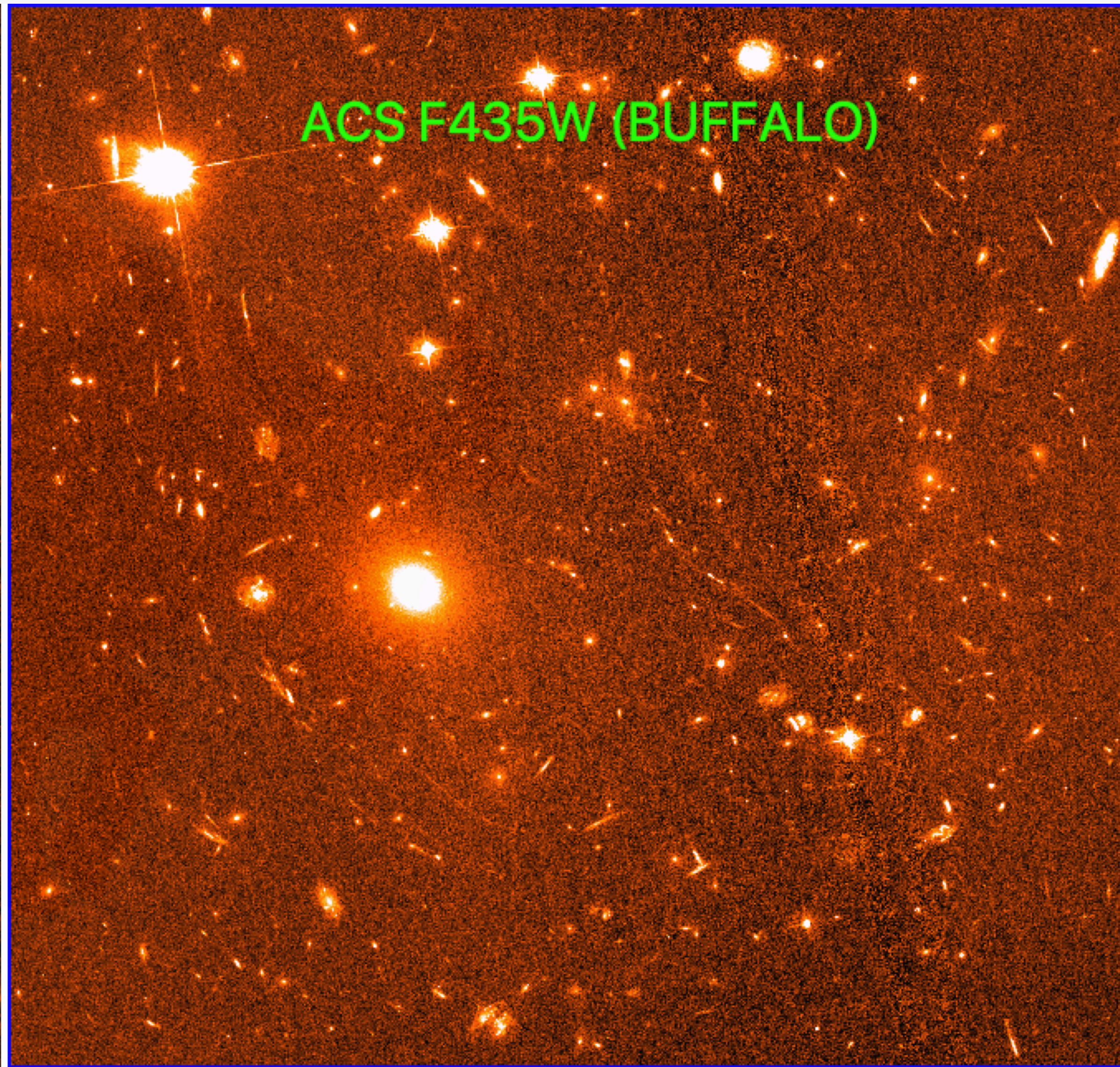




MACSJ0717 LBC-SDT-U ~10hrs

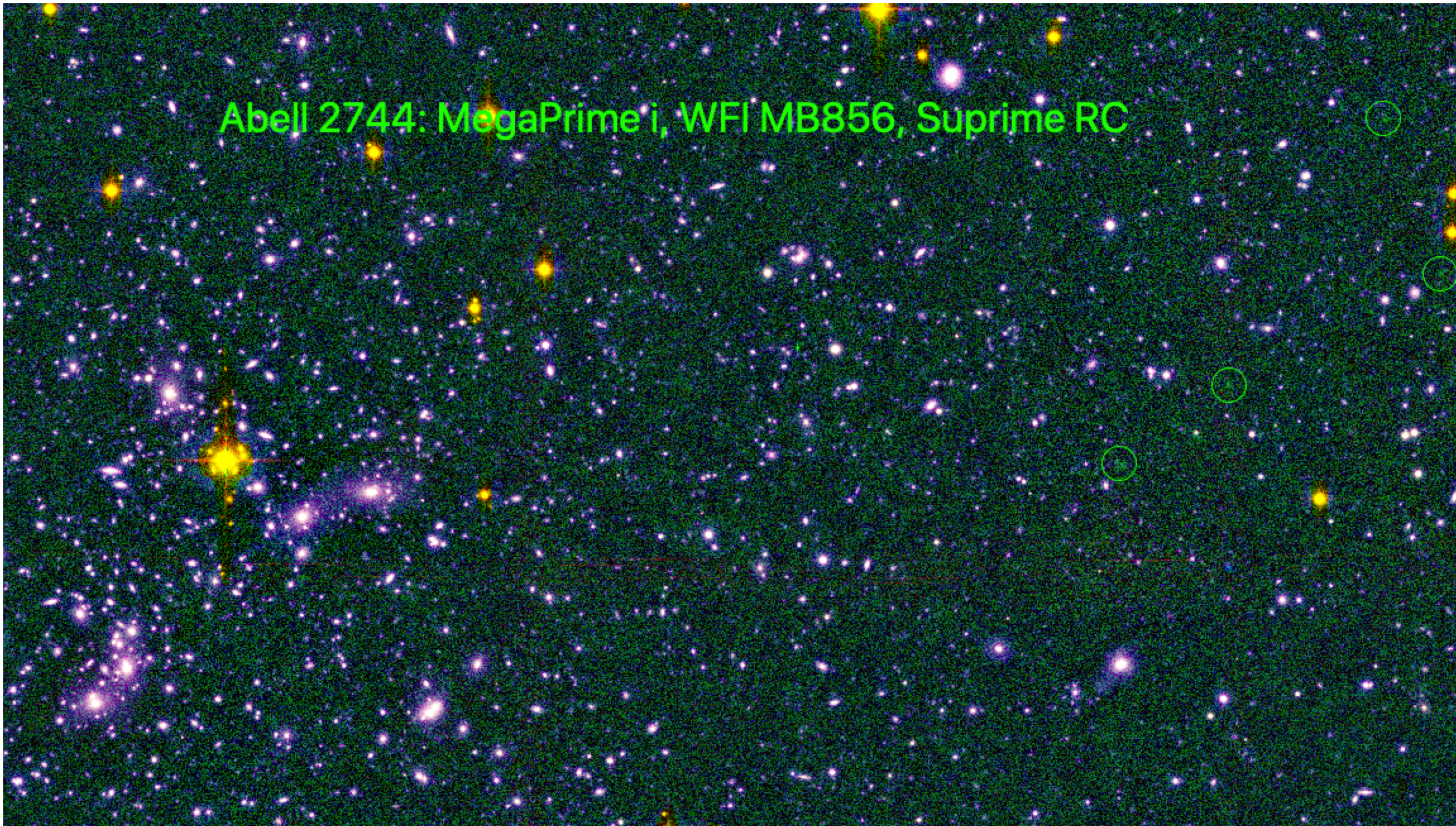


ACS F435W (BUFFALO)



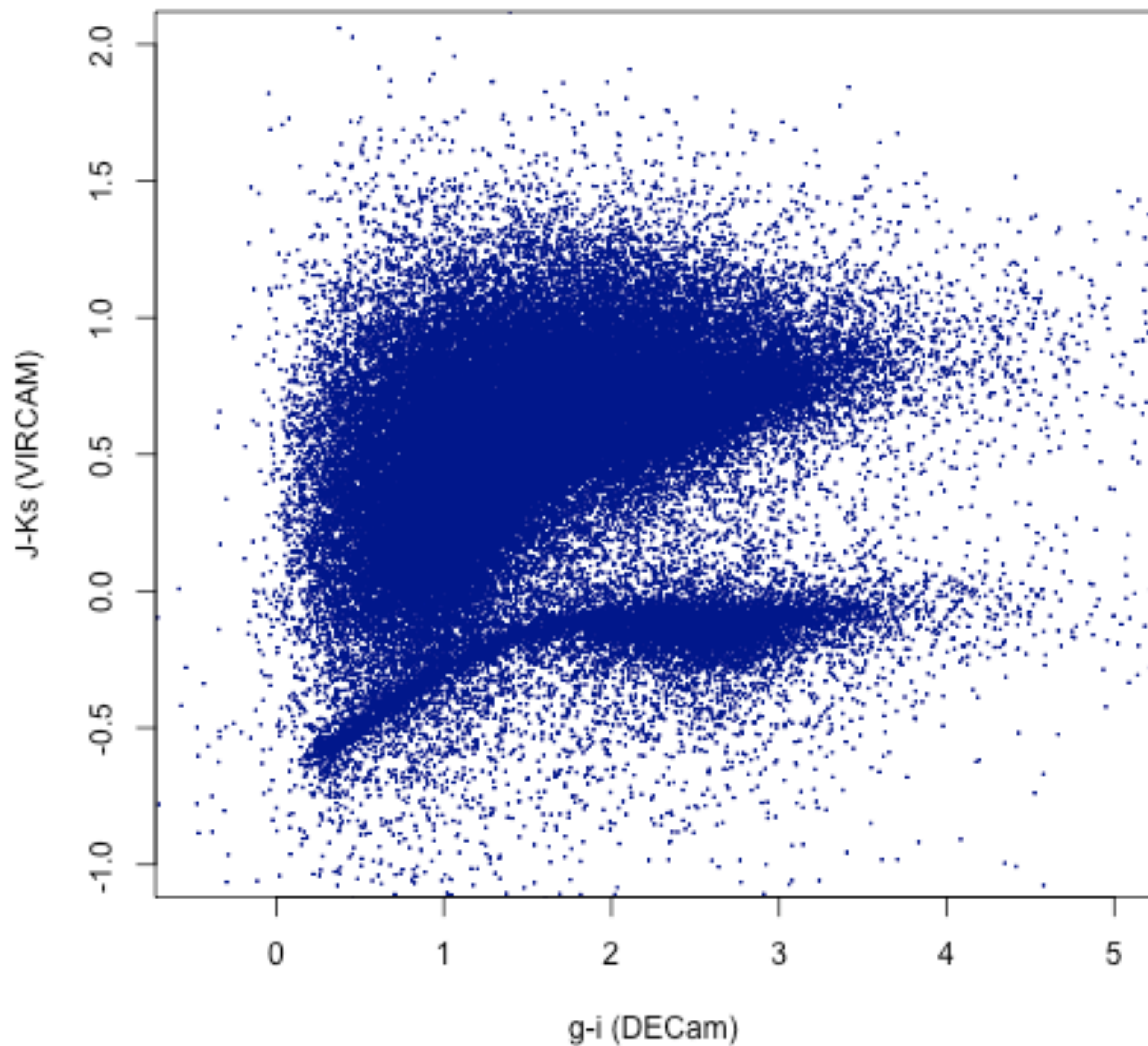


Abell 2744: MegaPrime i, WFI MB856, Suprime RC

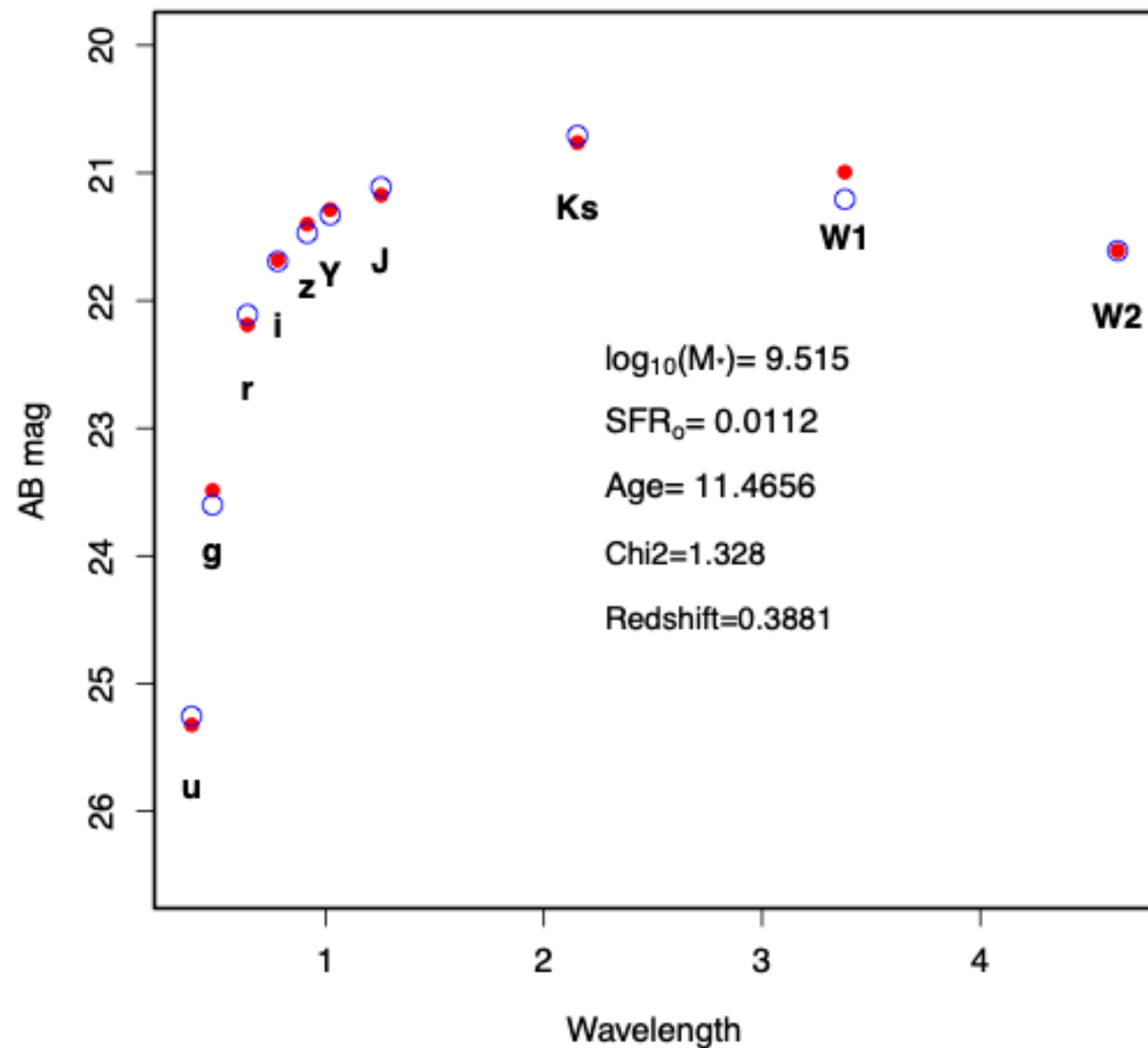




# MACSJ0416



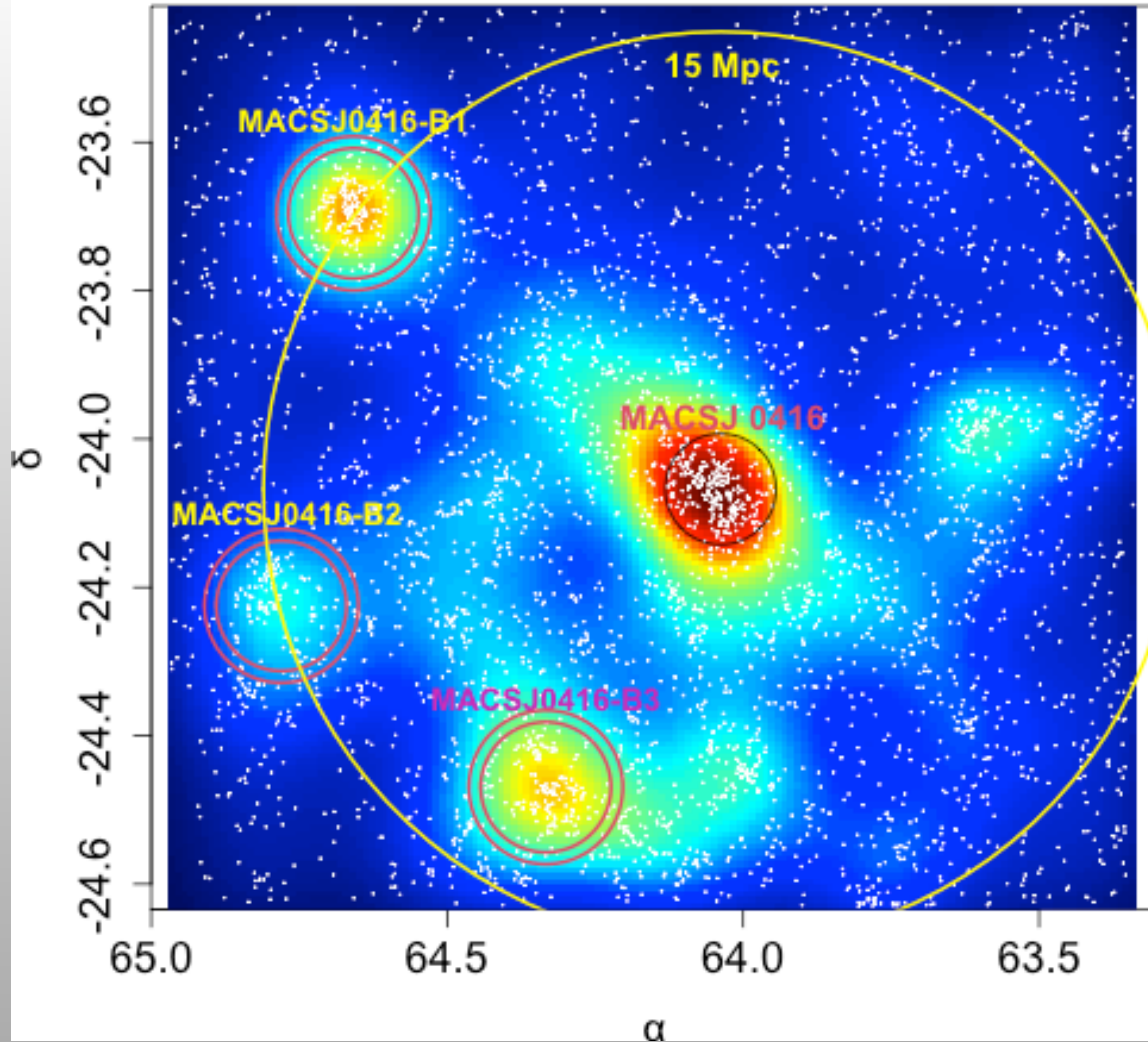
# MACSJ0416--226507





MACSJ04166 photoz~redseq (Optical+YJKs)

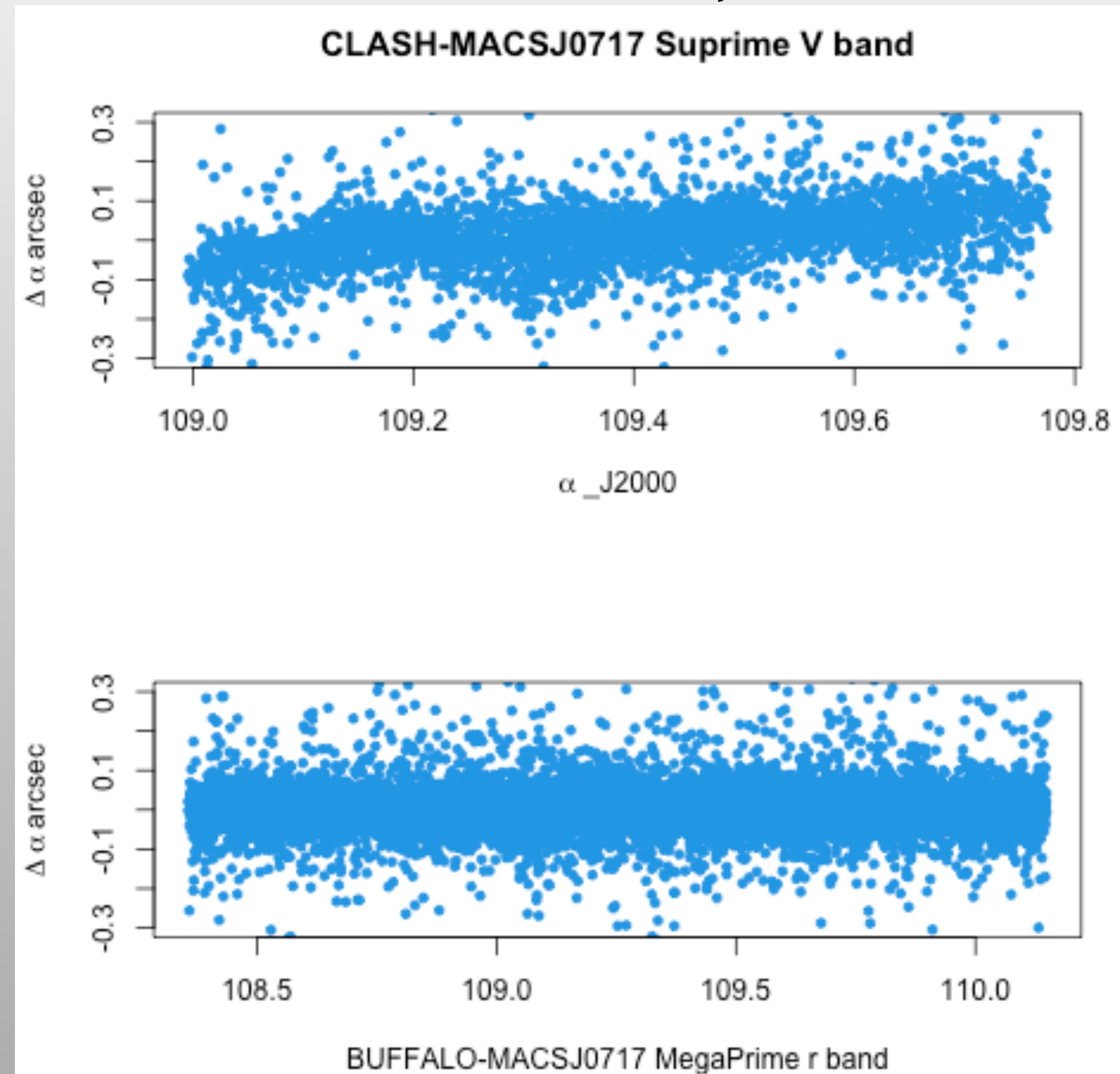
*DECAM + VIRCAM*





# What next?

- Ground based images so far used for astrometry (BUFFALO) so far.. (comparison against GAIA EDR3)



- Wide(r) field spectroscopy? Aim: large scale (~20-30 Mpc) environment of BUFFALO clusters; filaments, (massive-infalling) groups..
- Exploitation of *forthcoming* 🤔 VR optical + NIR data in advance to EUCLID/Roman