



# OBSERVING OBSCURE OBJECTS

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The Astronomy Connection

Texas Star Party 2012

# Topics

- ▣ Sources and References
- ▣ Galaxies and Groups
- ▣ Planetary Nebulae
- ▣ Enhancing your observing



# Sources and References

How to search for new objects?

- ▣ Websites and forums
- ▣ Astrophysical Journals
- ▣ User Groups (eg AmAstro)

Now you found this new object...what do you do next?

- ▣ Verify identity and other pertinent data to observing
- ▣ Look at sky survey images



# Some Useful Websites

**Adventures of Deep Space:** Steve Gottlieb & Mark Wagner

- ▣ Pretty much everything off the beaten path

**pnalsing.com:** Paul Alsing

- ▣ “Something for everyone”

**Blackskies.org**

- ▣ Fantastic Planetary Nebulae site



# Forums

## **DeepSkyForum.com**

- ▣ Started by Dragan Nikin and Jimi Lowrey. As the name suggests this forum specifically discusses Deep Sky Observing
- ▣ New site but growing. Many of the world's best observers are on-board

## **Galaxy Zoo**

- ▣ :Stunning Sights!" category

# NED and SIMBAD

## **NED** – NASA Extragalactic Database

- ▣ Near Name search tool
- ▣ Near Position search tool

## **SIMBAD**

- ▣ Operated at CDS, Strasbourg, France
- ▣ Queried by object name, coordinates, etc



# Image Sources



## DSS – Digital Sky Survey

- 48" Schmidt telescope at Mt. Palomar in CA
- POSS-I – Original Palomar Sky Survey taken in the 1950's
- POSS-II – The 48" was upgraded and the survey was done again in the early 1980's.

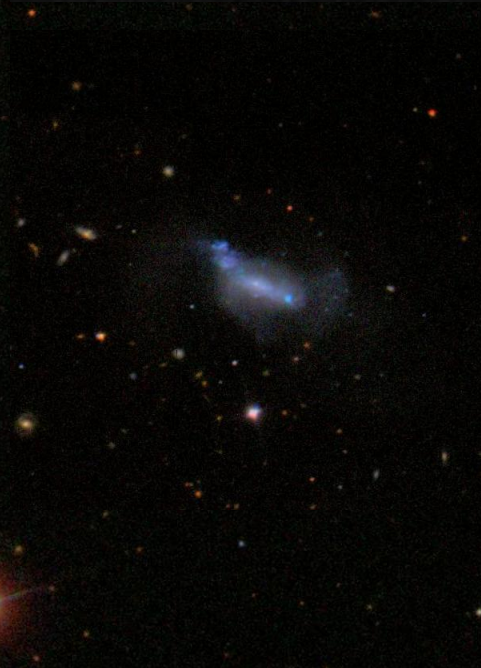


## SDSS – Sloan Digital Sky Survey

- 2.5 meter telescope at Apache Point Obs. at NM
- Taken from 2000 – 2008
- Covered a bit more than a quarter of the whole sky



# DSS versus SDSS





# Some Galaxy Catalogues

- ▣ **MCG** – Morphological Catalogue of Galaxies – About 29,000 galaxies and  $\text{mag} \leq 15.0$ – Drs. Vorostsov, Krasnogorskaya and Arkhipova
- ▣ **UGC** – Uppsala General Catalogue of Galaxies 12,939 galaxies  $\delta > -2$  degrees, diameter  $> 1'$  and  $\text{mag} \leq 14.5$ – Peter Nilson
- ▣ **AM** – Catalogue of Southern Peculiar Galaxies and Associations 6,445 peculiar and interacting galaxies found on southern sky survey plates – Drs. Arp and Madore



# Some Galaxy Groups

- ▣ **Rose** – Dr. James Rose – 33 quartets
- ▣ **KTG** – Isolated triplets of galaxies 84 isolated triples of northern hemisphere galaxies with apparent magnitudes of components brighter than mag 15.7– Dr. Karachentev
- ▣ **CGCG** – Catalogue of Galaxy and Clusters of Galaxies – About 31,000 northern hemisphere galaxies - Dr. Zwicky
- ▣ **Shakhbazian Compact Galaxy Groups**

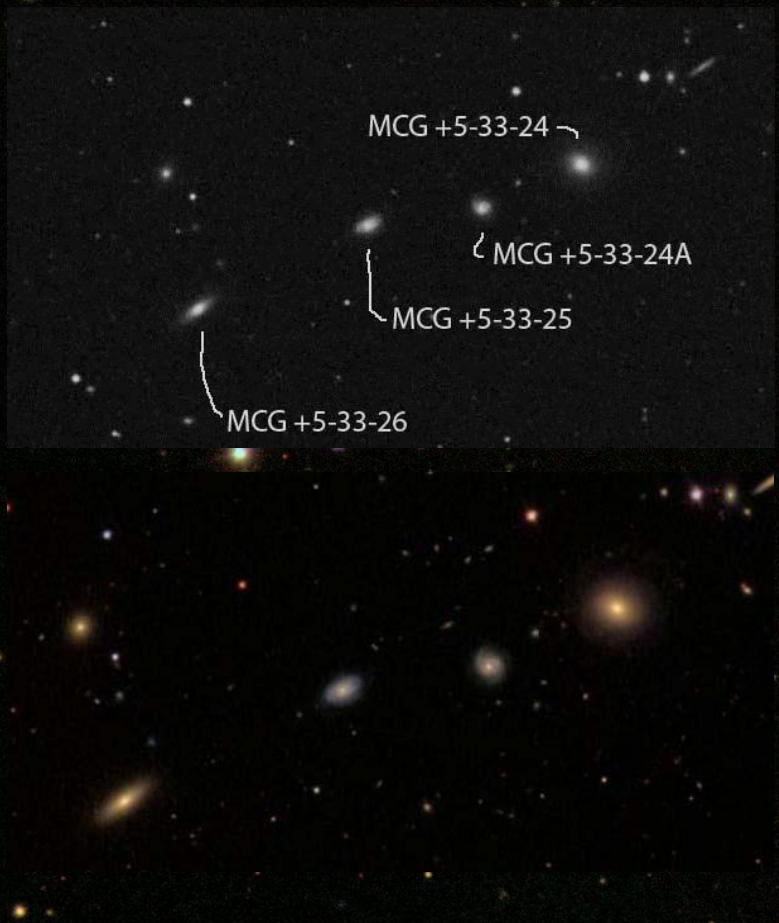


# Rose Compact Galaxy Catalogue

- ▣ Dr. James A. Rose, University of North Carolina, Chapel Hill (now retired)
- ▣ 33 total groups - 26 definite and 7 probable.
- ▣ Spring list - placed nice and high for northern latitude observers.
- ▣ Many are very difficult, especially to “bust” it apart.
- ▣ Recommend an 18” or larger scope and steady skies to tackle this list.
- ▣ All members are at least mag 17.5



# Rose 16 (Canes Venatici)

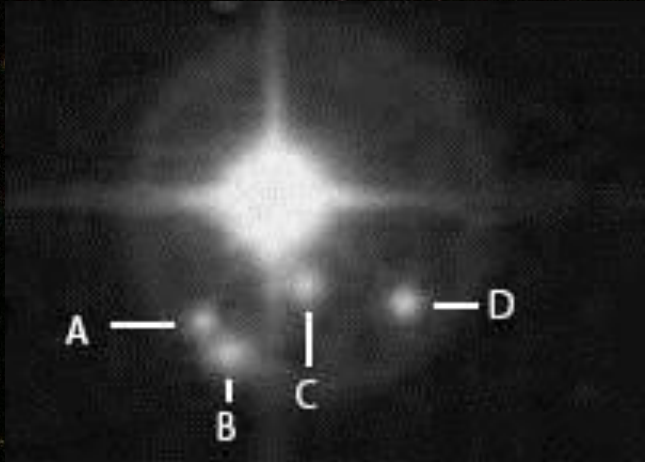


One of the easiest Rose Groups

22" reflector at 308x and 10.2' field



# Rose 33 (Bootes)



“B” is only 30” from a  
7.9 magnitude star!



22” reflector at 821x and 3.1’ field

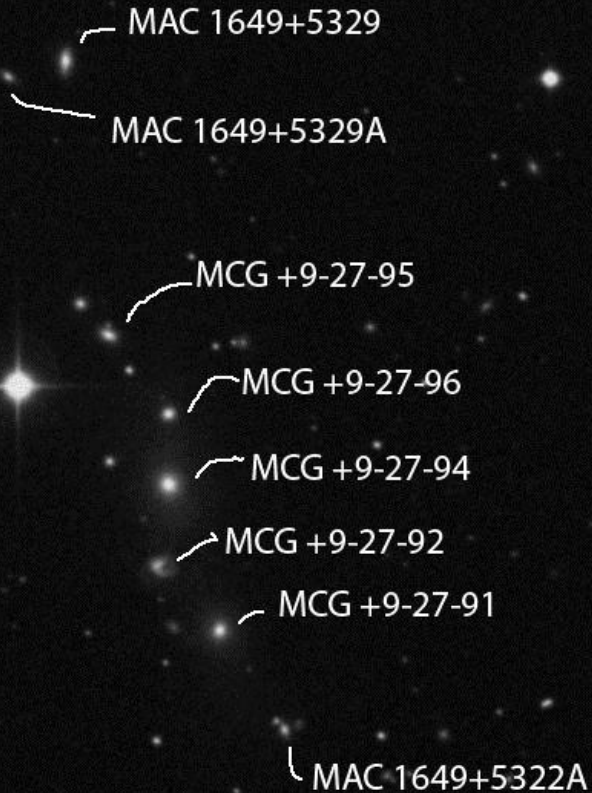


# Shakhbazian Compact Galaxy Groups

- ▣ Some observers consider the Shakhbazian Groups as the “next” Hickson groups.
- ▣ Way more difficult than the Hickson Groups.
- ▣ Most are very tough...even in large telescopes.
- ▣ 377 total groups



# Shakhbazian 16 (Draco)



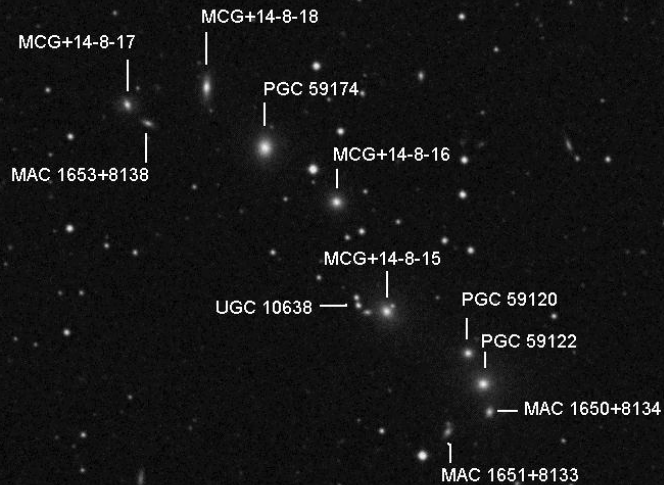
Chain is 8' long



22" reflector at 308x and 10.2' field



# Shakhbazian 166 (Ursa Minor)



Chain is 8' long



22" reflector at 308x and 10.2' field



# Shakhbazian 1 (Ursa Major)



1 and 2 are the easiest  
3 and 4 are still pretty easy  
5 and 6 getting tough (F, vS, R)  
7 and 8 are tough (vF, vS, R)

1.3' across and mag 17+



48" reflector at 488x and 5.2' field



# Shakhbazian 205 (Coma Berenices)



2.7' across and mags 15.4 - 16.5



48" reflector at 488x and 5.2' field



# Planetary Nebulae

SEC - Strasbourg – ESO Catalogue of Galactic  
Planetary Nebulae (1992)

PK – Perek-Kohoutek

Minkowski

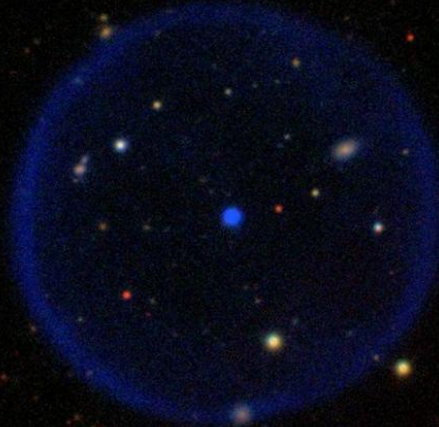
Kohoutek

Sandulek

Merrill

Weinberger (Wein)

Abell Catalogue of Planetary Nebulae





# Observing

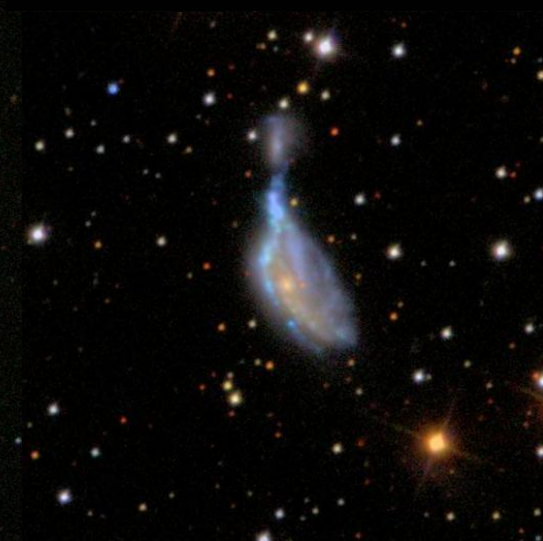
- ▣ Aperture – Aperture Wins no matter how you slice it.
- ▣ Dark skies – Darker = Deeper
- ▣ Magnification, magnification!
- ▣ Steady Skies – better seeing = ability to resolve close companions or seeing detail
- ▣ Wiggle test



# Ethos versus Zeiss ZAO-II (6mm) NGC 6745 in Lyra



22" reflector at 383x





# Hooded Observing Vest



Dark Skies Apparel



# Eyepiece Guards





# Netbook as an e-book





# Publications Available

- ▣ Hickson Group Observer's Guide
- ▣ Abell Planetary Nebulae Observer's Guide
- ▣ Observing the Arp Peculiar Galaxies

Available with Kepple and Sanner in the vendor area.

Downloadable observing guides available under my website

[www.FaintFuzzies.com](http://www.FaintFuzzies.com)



# Questions

