

80'S ASTROPHOTOGRAPHY VS. VIDEO ASTRONOMY

A comparison between images from “A Field Guide to the Stars & Planets” and the Mallincam Xtreme

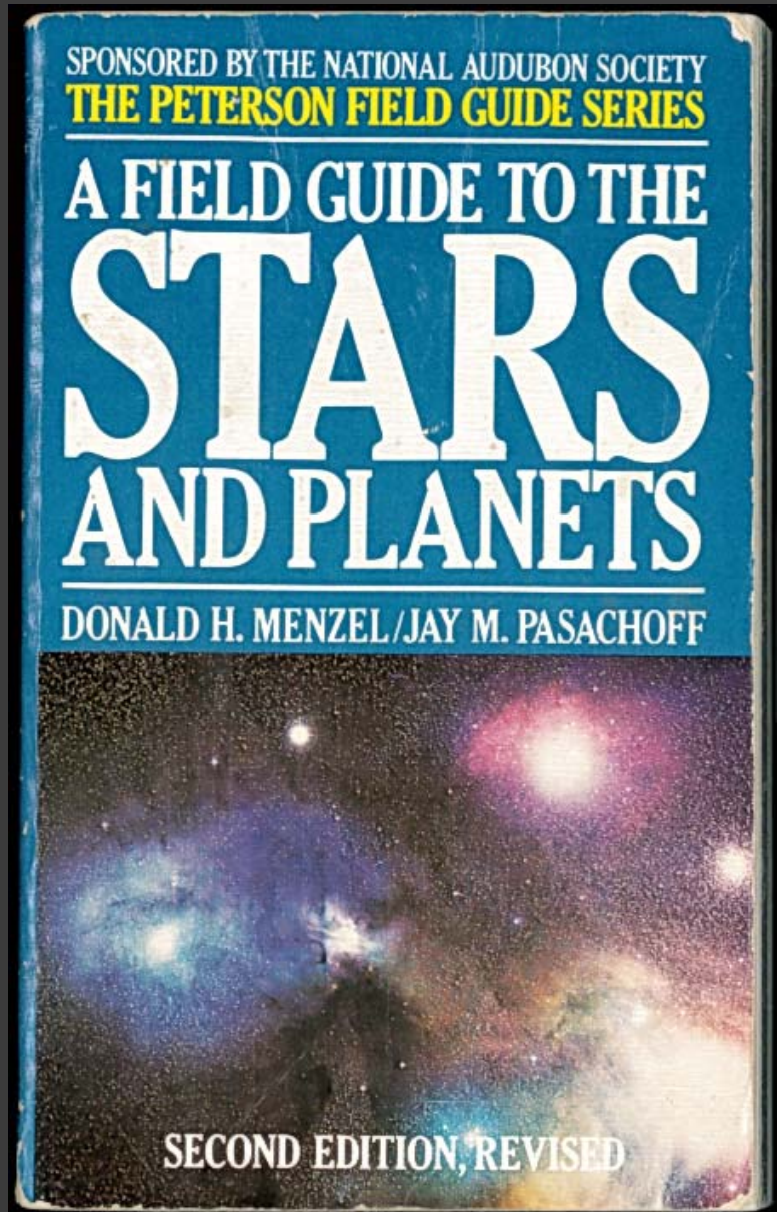
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Introduction

- The **Paterson Field Guide** series was for me the go-to reference books when I was growing up, for everything from **birds** and **bugs** to **stars** and **planets**.
- I happened across a copy of “**A Field Guide to the Stars & Planets**” at a charity book sale a year ago and bought it out of nostalgia.
- I was amazed at how the colour images in the book, which represented the **best in amateur astrophotography** at the time, looked compared to the live views that I can get with my MallinCam.
- I’ve put together this slide show to prove just how far the field of amateur astronomy has come in 30 years.

A Field Guide to the Stars & Planets



- The version of the book I have is the 2nd edition, published in 1983.
- Most of the colour images in the book were provided by the famous amateur astronomer Ben Mayer, who amongst other things invented the Projection Blink Comparator (PROBLICOM), and was the first person to photograph a supernova (Cygni 1975) during its brightening stage.

1980's Astrophotography

- Images collected by **film** cameras, often **B+W** through colour filters then combined in dark room
- Resolution, sensitivity, colour saturation...all limited by film technology of the day
- Often had to use **chilled film** to reduce “reciprocity failure” (not enough photons to permanently trigger chemical reaction on film)
 - **Ben Mayer**: 14” SCT or 8” Schmidt, chilled colour film, ASA 400, 30 to 120min exposure
 - **Meade Corp**: 8” SCT, normal colour film
 - **Hans Vehrenberg**: 14” SCT, separate B+W images combined in dark room
 - **Lick Observatory**: 120” (3m) reflector, separate B+W images through filters
 - **University of Arizona**: 61” (1.54m) Cassegrain, normal colour film

2013 Video Astronomy

- Images collected by **screen capture** of live Svideo feed from a **Mallincam Xtreme** (classic) unless indicated otherwise
- Images are **single video frames** (not stacks) unless indicated otherwise, no other image processing, image same as viewed on screen live
- Exposure times range from 30sec to 180sec, gain level 4 (50%)
- Images collected by myself from either:
 - My backyard in central **Ottawa** (Mv+3.5), or
 - Family cottage just north of **Petawawa** (Mv+5.5)
- Orion Atlas EQ/G mount used for all images, and range of scopes:
 - Meade LX-10 8" SCT
 - William Optics FLT98 triplet APO
 - Maxvision ED80 triplet APO
 - Canon 'c' mount 17-102mm focal length zoom lens, 48mm aperture

M11 Wild Duck Cluster

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

M13 Hercules Cluster

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

M64 Black Eye Galaxy

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2013
8" LX-10, Ottawa

M51 Whirlpool Galaxy

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Petawawa

M101 Pinwheel Galaxy

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2011
ED80, Petawawa

M33 Triangulum Galaxy

Field Guide
Ben Mayer 1979



Mallincam Xtreme
Jim Thompson 2011
ED80, Petawawa

M57 Ring Nebula

Field Guide
Ben Mayer 1980



MallinCam Xtreme
Jim Thompson 2011
8" LX-10, Petawawa

M27 Dumbbell Nebula

Field Guide
Ben Mayer 1979



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

M76 Little Dumbbell Nebula

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

M97 Owl Nebula

Field Guide
Ben Mayer 1980



MallinCam Xtreme
Jim Thompson 2012
8" LX-10, Ottawa

M1 Crab Nebula

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2012
8" LX-10, Ottawa

M17 Swan Nebula

Field Guide
Meade Instruments Corp. 1983



Mallincam Xtreme
Jim Thompson 2013
FLT98, Petawawa

M16 Eagle Nebula

Field Guide
Ben Mayer 1980



Mallincam Xtreme
Jim Thompson 2012
8" LX-10, Ottawa

M8 Lagoon Nebula

Field Guide
Ben Mayer 1978



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

M20 Trifid Nebula

Field Guide
Ben Mayer 1979



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Petawawa

M42 Orion Nebula

Field Guide
Meade Instruments Corp. 1983



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

NGC7000 N. American Nebula

Field Guide
Hans Vehrenberg 1977



Mallincam Xtreme
Jim Thompson 2012
Canon 17-102 lens, Petawawa

M82 Cigar Galaxy

Field Guide
Lick Observatory 1983
120" reflector



Mallincam Xtreme
Jim Thompson 2011
8" LX-10, Ottawa

NGC7635 Bubble Nebula

Field Guide
Lick Observatory 1983
120" reflector



Mallincam Xtreme
Jim Thompson 2012
8" LX-10, Ottawa

Jupiter & Saturn

Field Guide

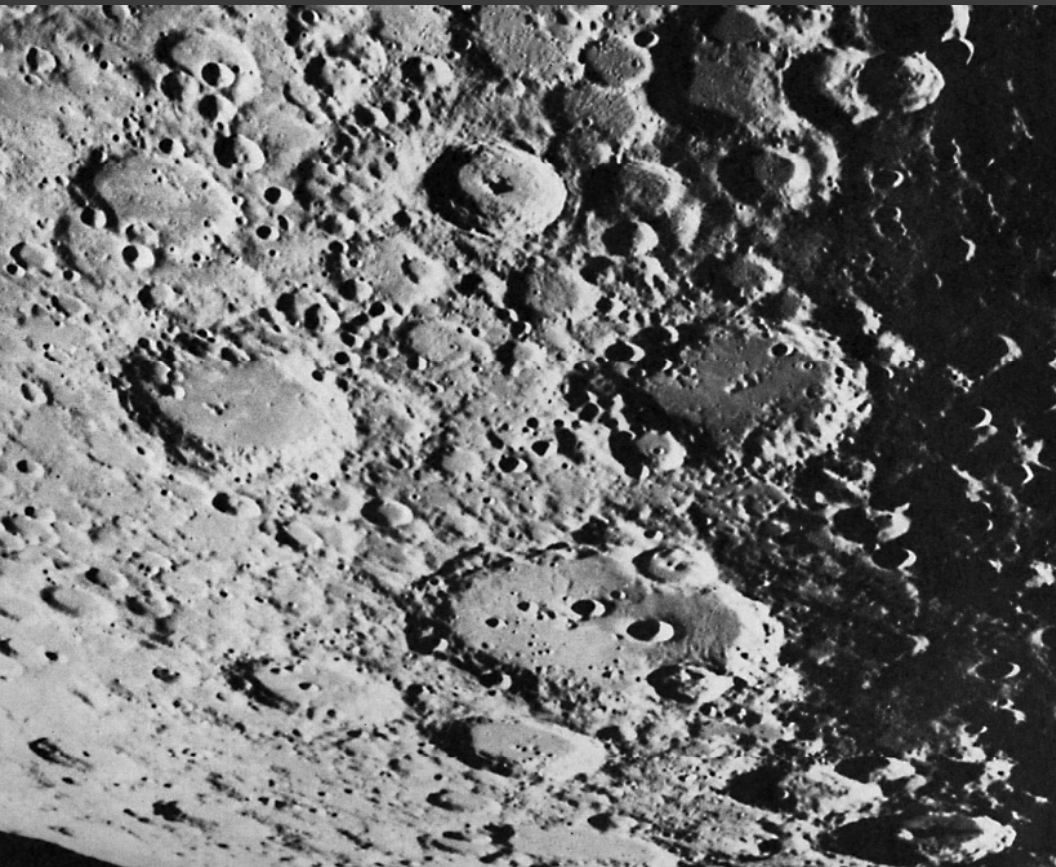
Lunar & Planetary Lab,
University of Arizona, 61" Cass.



Imaging Source DBK51
Stack best 20% of ~2000 frames
Jim Thompson 2012 & 2013
8" LX-10, Ottawa

Lunar...ANOTHER STORY

D. Alter, "Lunar Atlas", 1964
Mt. Wilson & Palomar Lunar Plate 182
08 Oct 1955, 60" Cassegrain



Imaging Source DBK51
Baader 685nm hi-pass filter
Stack best 20% of ~1500 frames
Jim Thompson 2013
10" VRC, Ottawa