

# 80'S ASTROPHOTOGRAPHY VS. VIDEO ASTRONOMY

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

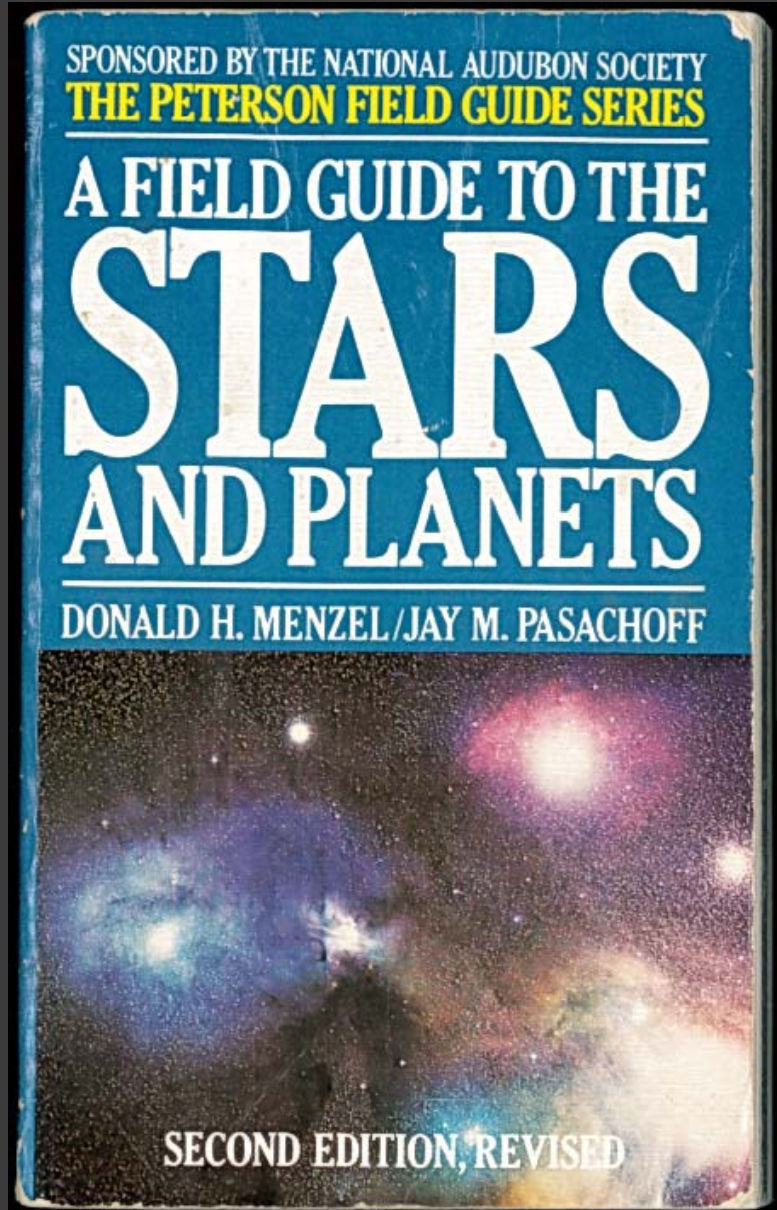
By Jim Thompson\*  
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\* NSN Channel: AbbeyRoadObservatory, Website: [karmalimbo.com/aro](http://karmalimbo.com/aro)

# 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 2<sup>nd</sup> 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
  - William Optics ZS66 doublet 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, 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

Field Guide  
Lunar & Planetary Lab,  
University of Arizona, 1980's



Imaging Source DBK51  
Baader 635nm hi-pass filter  
Stack best 20% of ~1000 frames  
Jim Thompson 2013  
10" VRC, Ottawa