Through the Lens

Honoring the Past, Embracing the Present, Shaping the Future

Telephoto, Antiques, Data
Disclaimer

For the record
David is not a marine biologist or professional photographer but some of his work has been on national television.
Roswitha deals with the antique and feels like a millennial.
Glen is not a data scientist but he looks ahead, especially when driving.
Honoring the Past (David Parker)
Through the Lens
Seeing the Past, Present and Future

Agenda
Seeing the Past
- Brief History of Lens Based Astronomy
- Brief History of Astrophotography
- “Seeing the Past” from the Present Examples
Through the Lens
Seeing the Past, Present and Future

History of Lens Based Astronomy

- Galileo Galilei was among the first to use a telescope to observe the sky.
- Discovered the four largest moons of Jupiter in 1610.
- Observed the Phases of Venus.
- Published the Book “Sidereus Nuncius”.
- Found guilty of heresy and tortured.
Through the Lens
Seeing the Past, Present and Future

Louis Jacques Mande
- The first-known attempt at Astro-Photography was by Louis Jacques Mande.
- Inventor of the daguerreotype photography process.
- In 1839, he attempted to photograph the moon.

John William Draper
- John William Draper was credited with the first successful photograph of the moon a year later on March 23, 1840.

1840 The first successful photo of the moon.
Through the Lens
Seeing the Past, Present and Future

Orion Nebula – Photographic Record History

Orion Nebula (M42)
By Charles Messier, 1771

Orion Nebula (M42)
By Heny Draper, 1880
51 Minute Exposure
[1st known photo of a nebula]

Orion Nebula (M42)
By David Parker, 11/24/2017
3 Minute Exposure
When viewing astronomical objects, you are seeing the past!!

- A “Light Year” is a unit of astronomical distance equivalent to the distance that light travels in one Earth year, which is about 6,000,000,000,000 miles.
- “Light travels at 670,616,629 Miles Per Hour (MPH).
- Depending on the astronomical object, the object viewed/photographed from earth can be seconds to millions of years ago from the present.
- Examples are in the next few slides (Solar System, Our Galaxy – the Milky Way Galaxy, and Beyond)
Through the Lens
Seeing the Past, Present and Future

**Moon**
238,855 Miles
1.3 Light-Seconds

International Space Station (ISS) Lunar Transit
By David Parker, 1/30/2018

**Sun**
93,000,000 Miles
8 Light-Minutes

Solar Flares
By David Parker, 7/8/2018
Through the Lens
Seeing the Past, Present and Future

**Owl Nebula (M97)**
- 2,600 Light-Years

**Owl Nebula Sketch**
By William Parsons, 3/11/1848

**Owl Nebula (M97)**
By David Parker, 4/16/2018
[4 Hour Exposure]

**Eagle Nebula (M16)**
- 7,000 Light-Years

**Eagle Nebula (M16)**
By David Parker, 6/14/2018
[2.5 Hour Exposure]
Through the Lens
Seeing the Past, Present and Future

Triangulum Galaxy (M33)
2,723,000 Light-Years

Andromeda Galaxy (M31)
2,537,000 Light-Years

Triangulum Galaxy (M33)
By David Parker, 11/26/2017

Andromeda Galaxy (M31)
By David Parker, 11/26/2017
Through the Lens
Embracing the Present(or close to it)(Roswitha Firth)
Preservation vs Conservation

Preservation activities aim to minimize the physical and chemical deterioration of records and other artifacts, and to prevent the loss of information content (also known as passive conservation).

Conservation embraces preventive conservation, remedial conservation and restoration.
Conservation and Restoration

Art conservation is a science-based discipline that aims to preserve artwork, documents, artifacts and other cultural heritage. Preservation of the original is key, with improvements to its appearance secondary. Art conservation may entail cleaning, repairing damage, re-shaping, reassembling as well as toning in repairs to blend with the original object. It may involve removing old restorations.
Reversibility

Since methods for cleaning, reassembly, and restoration are subject to periodic reevaluation because of technical innovations and changing values, it is important that work be reversible so as not to impede the efforts of future conservators.
 Restoration at The Antiquarium

Antique works on paper, including documents and manuscripts
- Removal of spots, stains, foxing, toning
- Repair tears and holes in damaged paper
- Add facsimile paper to fill in missing paper
- Stabilize fragile and oversized works
- Deacidification

Bookbinding
- Re-assembling the pages of a book and stitching them together
- Re-covering, typically in leather while retaining as much of original covers as possible/desired
Condition

- When to restore and when to leave alone
Appearance

- When to restore and when to leave alone
Conservation Standards and Archival Materials

“We frame to conservation standards with archival materials.” – The Antiquarium

“Preservation matting and framing describes materials and methods designed to limit environmental (e.g., from light, water, humidity, airborne pollutants, dust, surrounding materials, etc.) risks to the displayed object. All materials used in the frame package must be chemically stable.” – The Library of Congress
What that really means to the client

The Antiquarium standards: Unless we are framing a “decorative” piece, we only use 100% rag matting.

The Library of Congress standards: Buffered wood pulp matting is acceptable.
Nothing permanent

• We mat, mount, and shrink wrap items for display in the gallery, or store them in mylar sleeves. The mounting is temporary, using glycine corners. The idea is that we don’t want to have to reverse hinging for something temporary.

• When framing, mounting with hinges is appropriate. There are different kinds, but the gold standard is Japanese tissue hinges with wheat paste. These are reversible if needed. They are also designed to tear so that the artwork doesn’t.

• Matting: 100% rag; for conservation quality framing we don’t accept the use of chemically purified, lignin-free wood pulp stock as appropriate (although the Library of Congress does)

• Framing should protect against light damage and dust and nothing in the framing package should harm the artwork
We are custodians of history, of the material that passes through the gallery, and we make every effort to ensure that it is preserved for future generations.
Education is an important component of what we do. We share our knowledge and our passion so that our clients can appreciate the unique history of the piece and will hopefully ensure its preservation.
Our Upper Kirby Gallery
Through the Lens
Shaping the Future (Glen Sanderson)

THE JETSONS
Through the Lens
Evolution of storage

- Kilburn tube – 1947
- Whirlwind core memory – 1953
- Bryant Chucking Grinder – 1959
- IBM 2315 disk cartridge – 1964
- Read Only Rope Memory 1969
- CD – RW 1997
- Cloud Storage 2009
Through the Lens
But what about longevity

- M Wein said, “the truth is that our digital storage media has a shorter than an old man with a good memory”
- Paper - +1000 years
- Magnetic Tapes (30 years under optimal storage) Realistically 10-20
- Cassette Tapes (about the same as magnetic tapes)
- Floppy Disks (about three to five years, claims for much longer though)
- Digital < 100 and that would be if you can access it
- NORSAM disk HD-Rosetta - +1000 years
- Glass Disk 13.8 Billion Years which is the age of the Universe (but would the human race evolve to a point that it would be pointless)
Factors involved in storage

• Environmental
  ◦ For DLT Tapes, what is the recommended storage?
    • Ideal is Non Fluctuating 64 Degrees and 40% Humidity
  ◦ For Paper what is the recommended storage
    • < 75 degrees and < 65% humidity

• Usage
  ◦ The more a tape is handled the greater the chance of wear and tear

• Manufacturing and Quality
  ◦ Can also play a part in longevity
Through the Lens
A few recommended formats

- Text Documents
  - PDF/A or PDF
  - RTF
- Spreadsheets
  - PDF/A or PDF
  - CSV or Tab Delimited
- Images
  - TIFF
  - JPG
  - PNG
The Future of Storage

- Data Stickies
- DNA
- Helium filled drives
- SMR Drives
- Holographic Storage
- Cassette