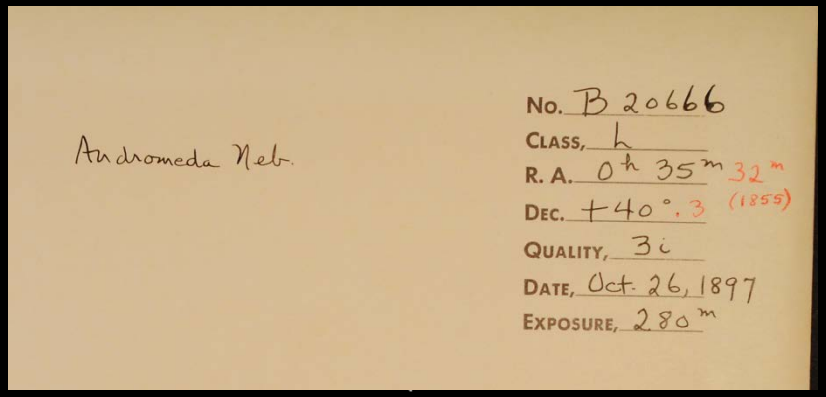
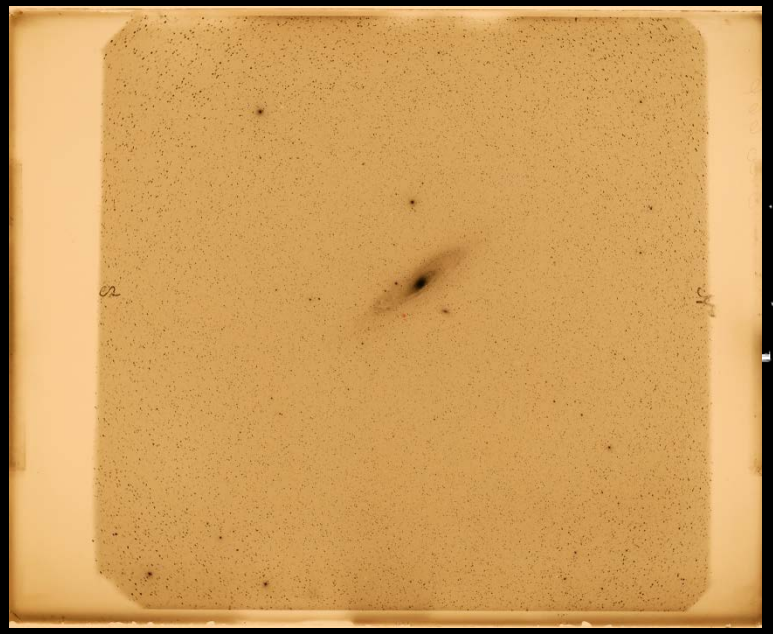
Making Celestial Plate Photography Personal

David Sliski

March 21st 2014

Astroplate Conference, Prague, Czech Republic





The now ancient age of plates

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Average age of admitted astronomy graduate students for fall 2014 is younger than the of the newest plates taken at Harvard

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The now ancient age of plates

- How can we get people interested?

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- How can we make students aware of the data in plates?

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- How can we get them interested in the investments made by their predecessors?

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The now ancient age of plates

- How can we get astronomers interested?
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- How can we get them interested in the investments made by their predecessors?

- Transcribe your metadata and publish it!

Average age of admitted astronomy graduate students for fall 2014 is younger than five of the newest plates taken at Harvard

What do I mean by Metadata?

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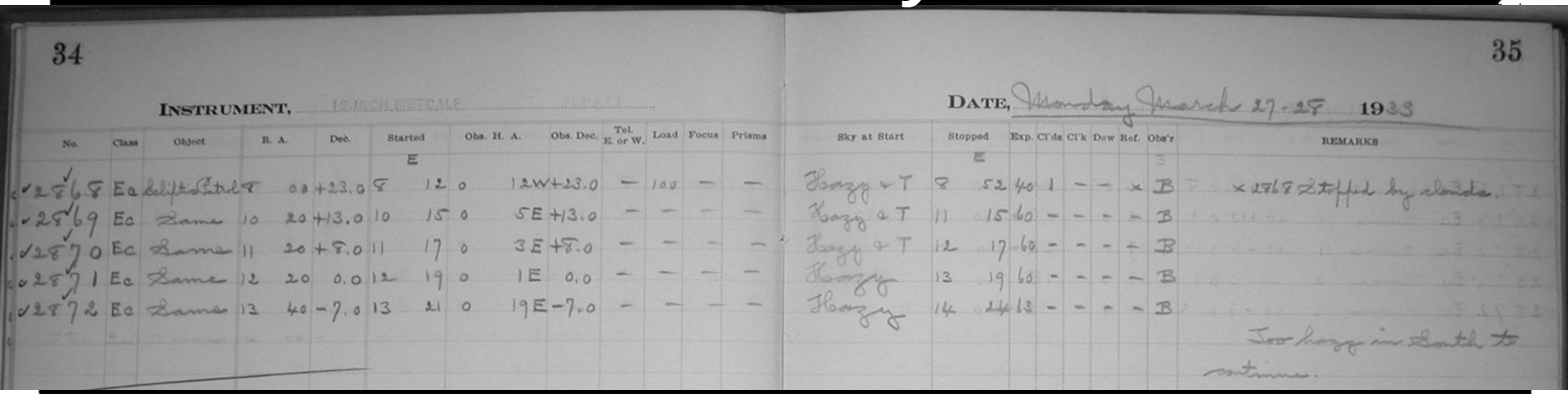


34

INSTRUMENT, 13 INCH METCALF

No.	Class	Object	R. A.	Dec.	Started E	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
✓2868	Ec	Ecliptic Patrol	08	+23.0	8 12	0	12W	+23.0	—	100	—	—
✓2869	Ec	Same	10	20	+13.0	10 15	0	5E	+13.0	—	—	—	—
✓2870	Ec	Same	11	20	+8.0	11 17	0	3E	+8.0	—	—	—	—
✓2871	Ec	Same	12	20	0.0	12 19	0	1E	0.0	—	—	—	—
✓2872	Ec	Same	13	40	−7.0	13 21	0	19E	−7.0	—	—	—	—

35

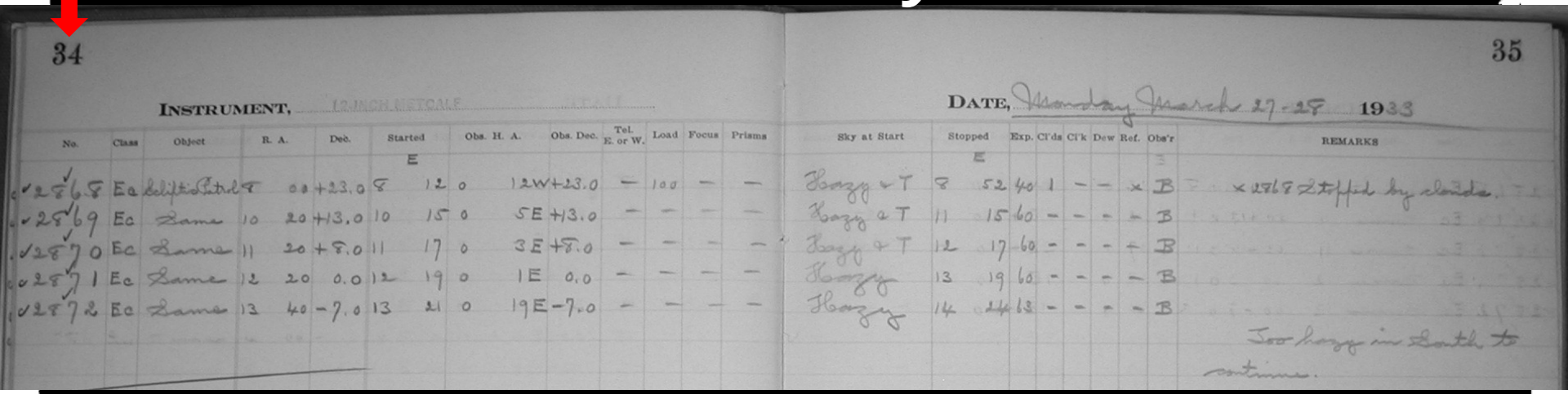
DATE, Monday March 27-28 1933

Sky at Start	Stopped E	Exp.	Cl'ds	Cl'k	Dew	Ref.	Obs'r	REMARKS
Hazy + T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
Hazy + T	11 15	60	—	—	—	—	B	
Hazy + T	12 17	60	—	—	—	+	B	
Hazy	13 19	60	—	—	—	—	B	
Hazy	14 24	63	—	—	—	—	B	

Too hazy in South to continue.

- This means all of your logbooks or records of the observations from the telescopes which took the plates

What do I mean by Metadata?



34

INSTRUMENT, 12-INCH METCALF

DATE, Monday March 27-28 1933

No.	Class	Object	R. A.	Dec.	Started E	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	Sky at Start	Stopped E	Exp.	Cl'ds	Cl'k	Dew	Ref.	Obs'r	REMARKS
✓2868	Ec	Ecliptic Patrol 9	08	+23.0	8 12	0	12W+23.0	—	100	—	—	Hazy & T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
✓2869	Ec	Same	10	20	+13.0	10 15	0	5E +13.0	—	—	—	—	Hazy & T	11 15	60	—	—	—	—	B
✓2870	Ec	Same	11	20	+8.0	11 17	0	3E +8.0	—	—	—	—	Hazy & T	12 17	60	—	—	—	—	B
✓2871	Ec	Same	12	20	0.0	12 19	0	1E 0.0	—	—	—	—	Hazy	13 19	60	—	—	—	—	B
✓2872	Ec	Same	13	40	−7.0	13 21	0	19E −7.0	—	—	—	—	Hazy	14 24	63	—	—	—	—	B

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35

- We digital, searchable records like:
- Page number

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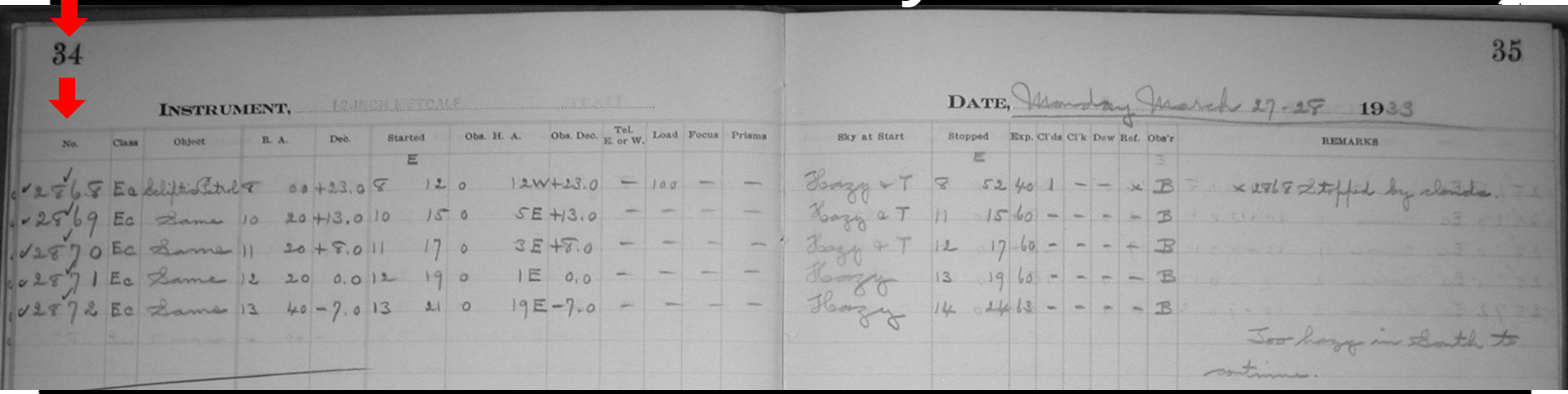

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					E								E							
✓2868	Ec	Ecliptic Patrol	08	+23.0	8 12	0	12W+23.0	—	100	—	—	Hazy & T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
✓2869	Ec	Same	10	20 +13.0	10 15	0	5E +13.0	—	—	—	—	Hazy & T	11 15	60	—	—	—	—	B	
✓2870	Ec	Same	11	20 +8.0	11 17	0	3E +8.0	—	—	—	—	Hazy & T	12 17	60	—	—	—	—	B	
✓2871	Ec	Same	12	20 0.0	12 19	0	1E 0.0	—	—	—	—	Hazy	13 19	60	—	—	—	—	B	
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																				Too hazy in South to continue.

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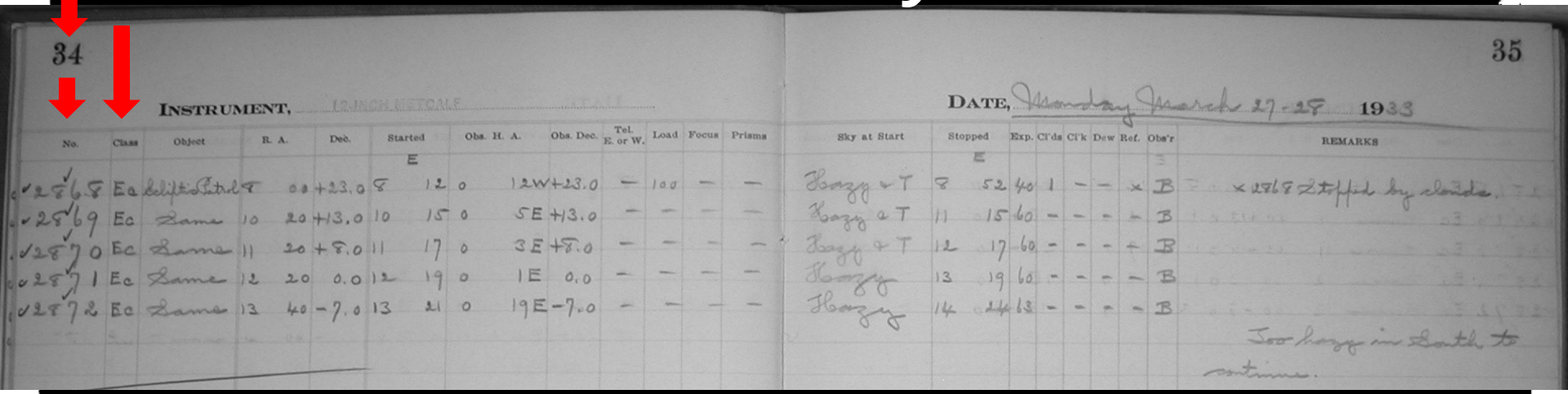

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					E								E							
2868	Ec	Ecliptic Field	08	+23.0	8 12	0	12W+23.0	—	100	—	—	Hazy & T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
2869	Ec	Same	10	20 +13.0	10 15	0	5E +13.0	—	—	—	—	Hazy & T	11 15	60	—	—	—	—	B	
2870	Ec	Same	11	20 +8.0	11 17	0	3E +8.0	—	—	—	—	Hazy & T	12 17	60	—	—	—	—	B	
2871	Ec	Same	12	20 0.0	12 19	0	1E 0.0	—	—	—	—	Hazy	13 19	60	—	—	—	—	B	
2872	Ec	Same	13	40 −7.0	13 21	0	19E −7.0	—	—	—	—	Hazy	14 24	63	—	—	—	—	B	

Too hazy in South to continue.

- We digital, searchable records like:
- Page number, plate number, class (filter)

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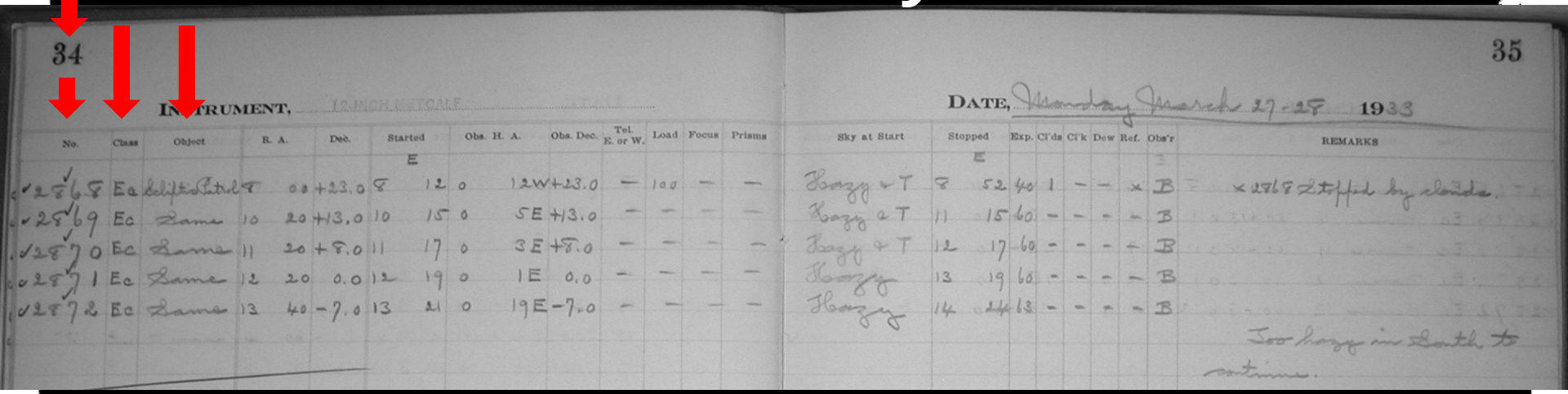

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INSTRUMENT, 12-INCH METCALF

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
					E						
✓2868	Ec	Elliptic Patrol	08	+23.0	8 12	0	12W+23.0	—	100	—	—
✓2869	Ec	Same	10	20 +13.0	10 15	0	5E +13.0	—	—	—	—
✓2870	Ec	Same	11	20 +8.0	11 17	0	3E +8.0	—	—	—	—
✓2871	Ec	Same	12	20 0.0	12 19	0	1E 0.0	—	—	—	—
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	E							
Hazy + T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
Hazy + T	11 15	60	—	—	—	—	B	
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Hazy	13 19	60	—	—	—	—	B	
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- We digital, searchable records like:
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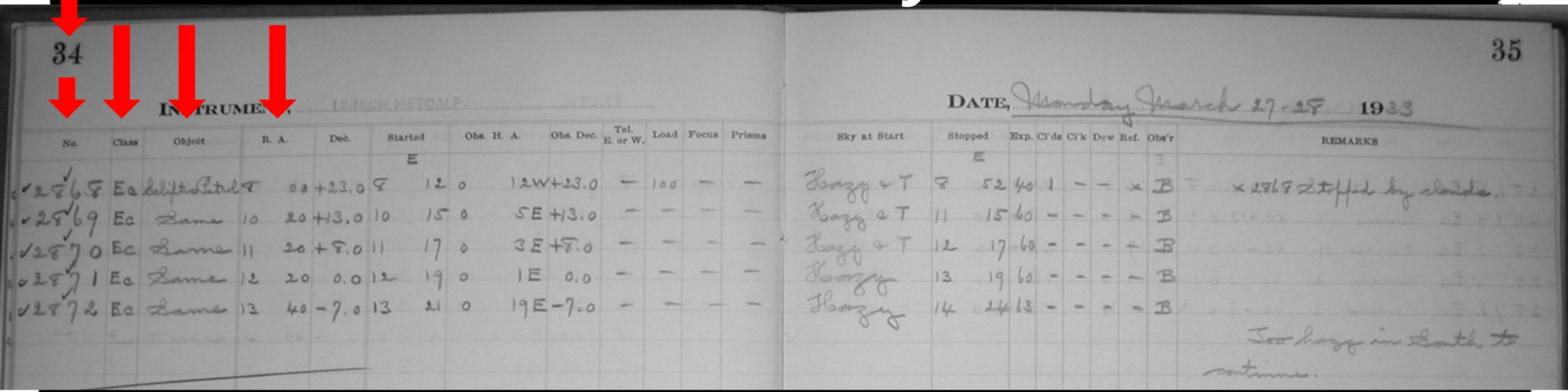

- We digital, searchable records like:
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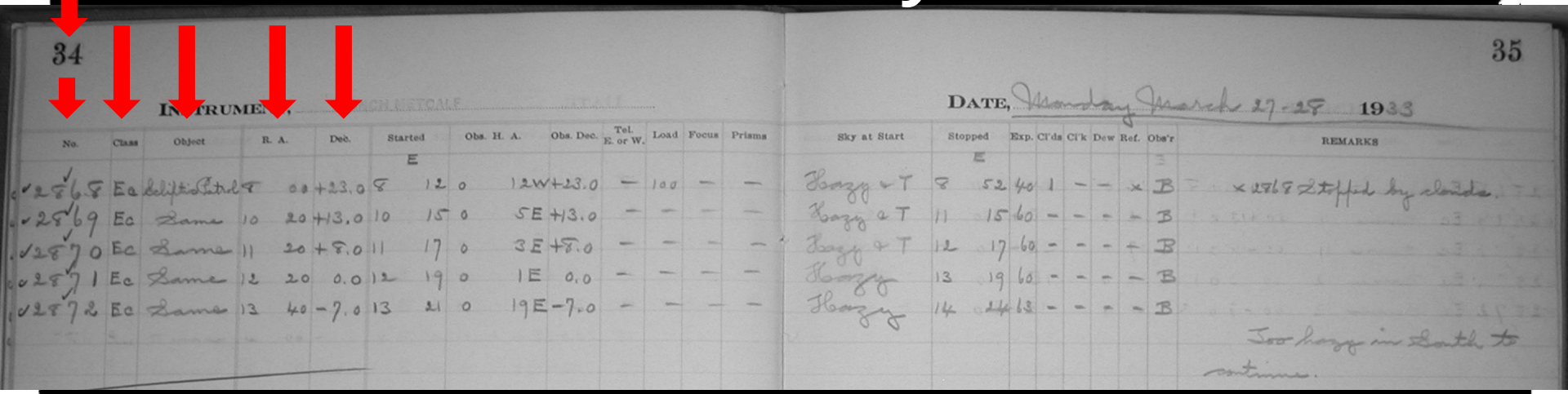

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2868	Ec	Eclipse Field 4	08	+23.0	8 12	0	12W+23.0	—	100	—	—	Hazy & T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
2869	Ec	Same	10	20 +13.0	10 15	0	5E +13.0	—	—	—	—	Hazy & T	11 15	60	—	—	—	—	B	
2870	Ec	Same	11	20 +8.0	11 17	0	3E +8.0	—	—	—	—	Hazy & T	12 17	60	—	—	—	—	B	
2871	Ec	Same	12	20 0.0	12 19	0	1E 0.0	—	—	—	—	Hazy	13 19	60	—	—	—	—	B	
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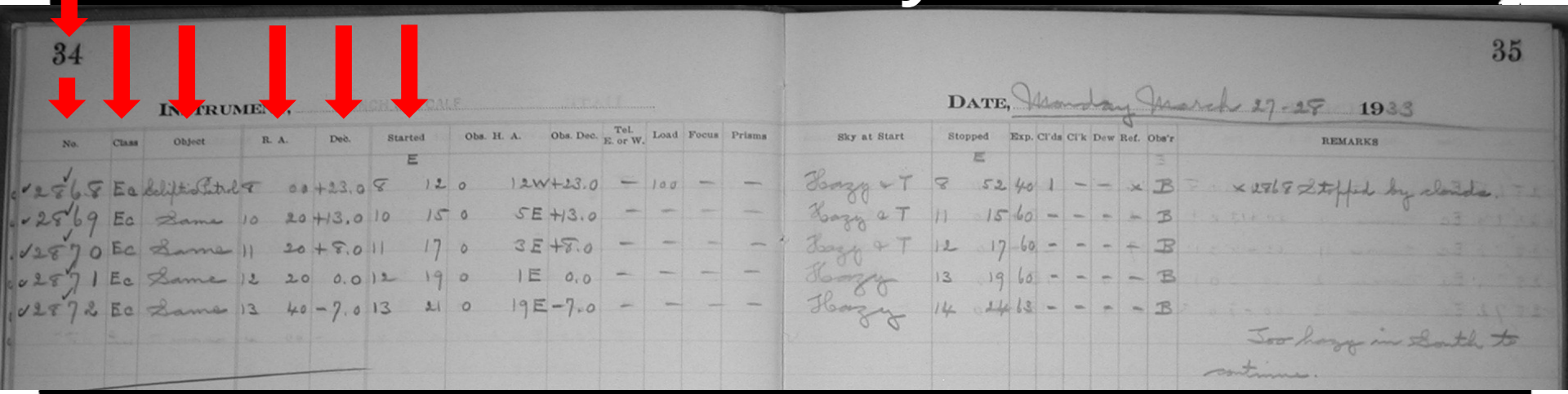

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					E								E							
2868	Ec	Ecliptic Field	08	+23.0	8	12 0	12W	+23.0	—	100	—	—	Hazy & T	8	52	40	1	—	—	x B	x 2868 Stopped by clouds
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2871	Ec	Same	12	20	0.0	12	19 0	1E	0.0	—	—	—	—	Hazy	13	19	60	—	—	—	— B	
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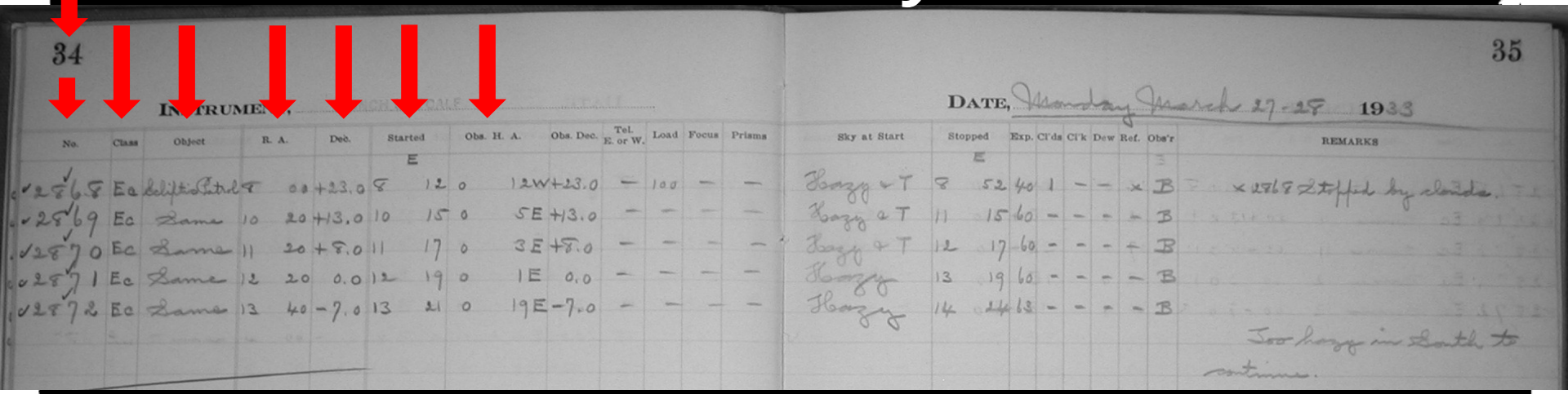

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2868	Ec	Ecliptic Patrol	08	+23.0	8 12 0	12W	+23.0	—	100	—	—	Hazy + T	8 52	40	1	—	—	x	B	x 2868 Stopped by clouds
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2871	Ec	Same	12	20	0.0	12 19 0	1E	0.0	—	—	—	—	Hazy	13 19	60	—	—	—	—	B
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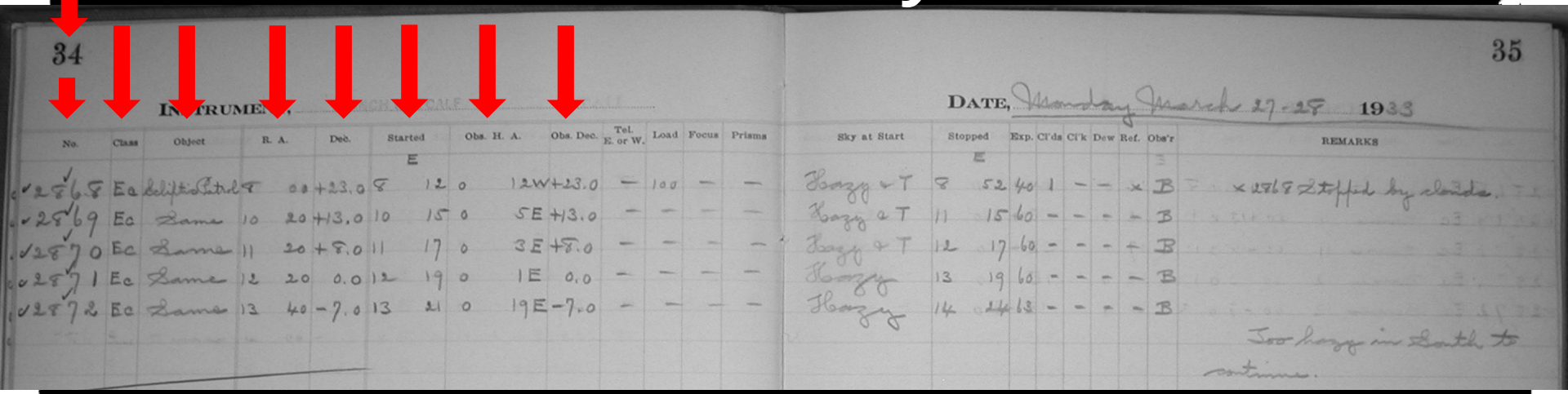

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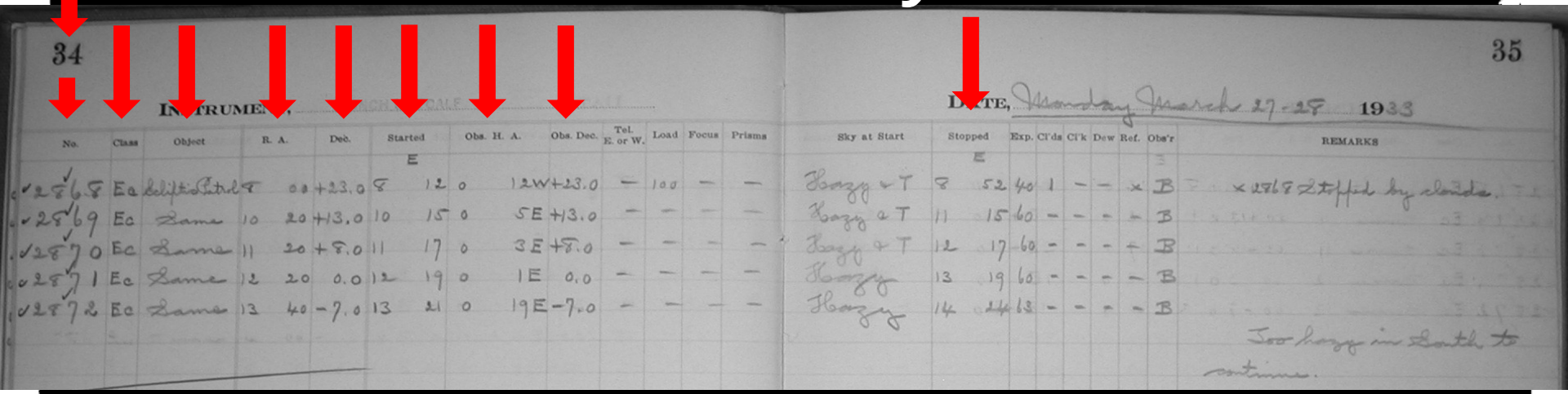

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INSTRUME[illegible]

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✓2868	Ec	Eclipse Field	08	+23.0	8 12	0	12W+23.0	—	100	—	—
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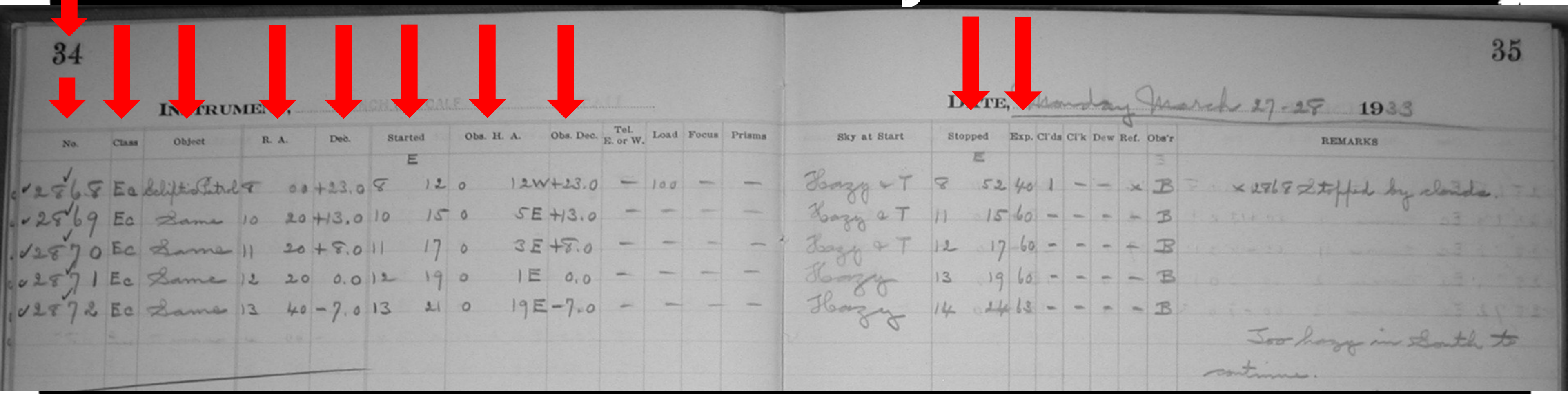

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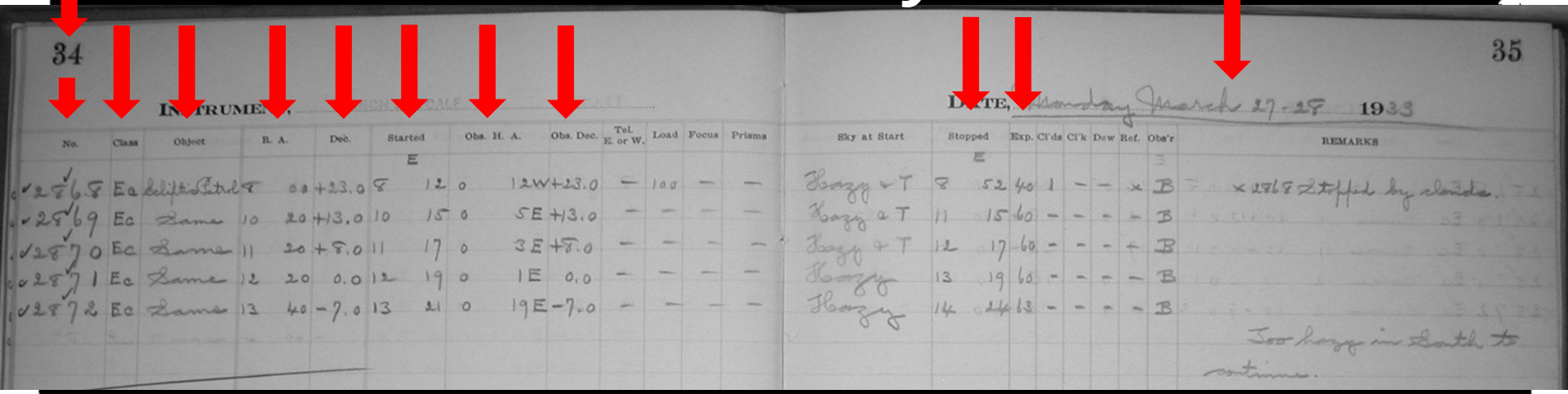

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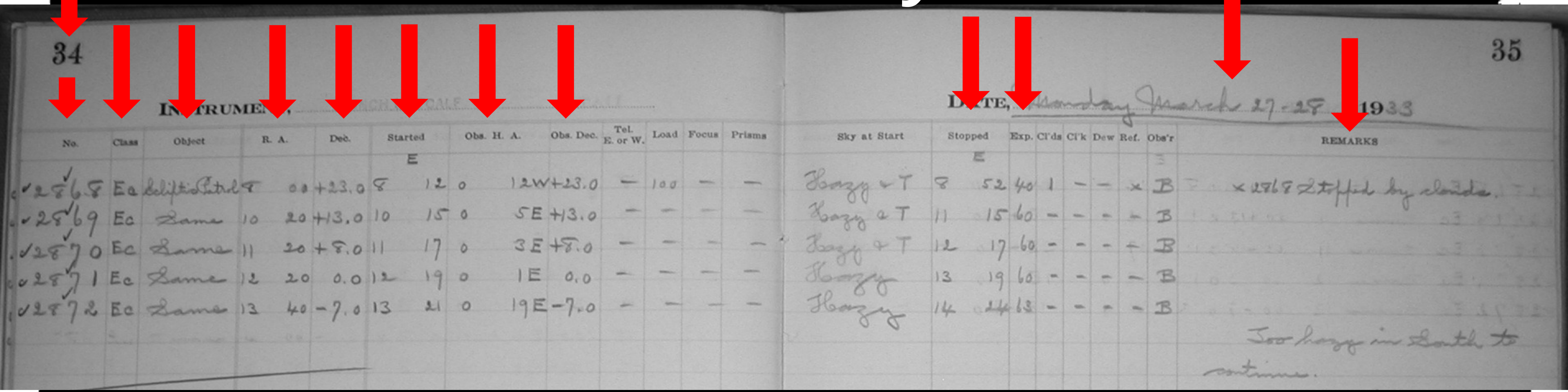

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Why Transcribe Metadata?

- If we can transcribe our metadata we can make it searchable

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- If the data is searchable, astronomers will want the data
- If astronomers want the data there will, hopefully, become more money to digitize and save the plates!
- At the end of the day, don't we need money to carry on the mission of preserving and digitizing the plates?

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... Well David, how do we do that? there are tens of thousands of lines if not hundreds of thousands of lines to transcribe and I certainly don’t have time to do it…

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I hear your cry – let me propose a solution

Making Celestial Plate Photography Personal

- First, we need to take pictures of all of the logs.
- Second, we need to recruit people to transcribe them
- Third, we need to correct those transcriptions
- Fourth, we need to publish them.
- Fifth, we need to get people excited and interested

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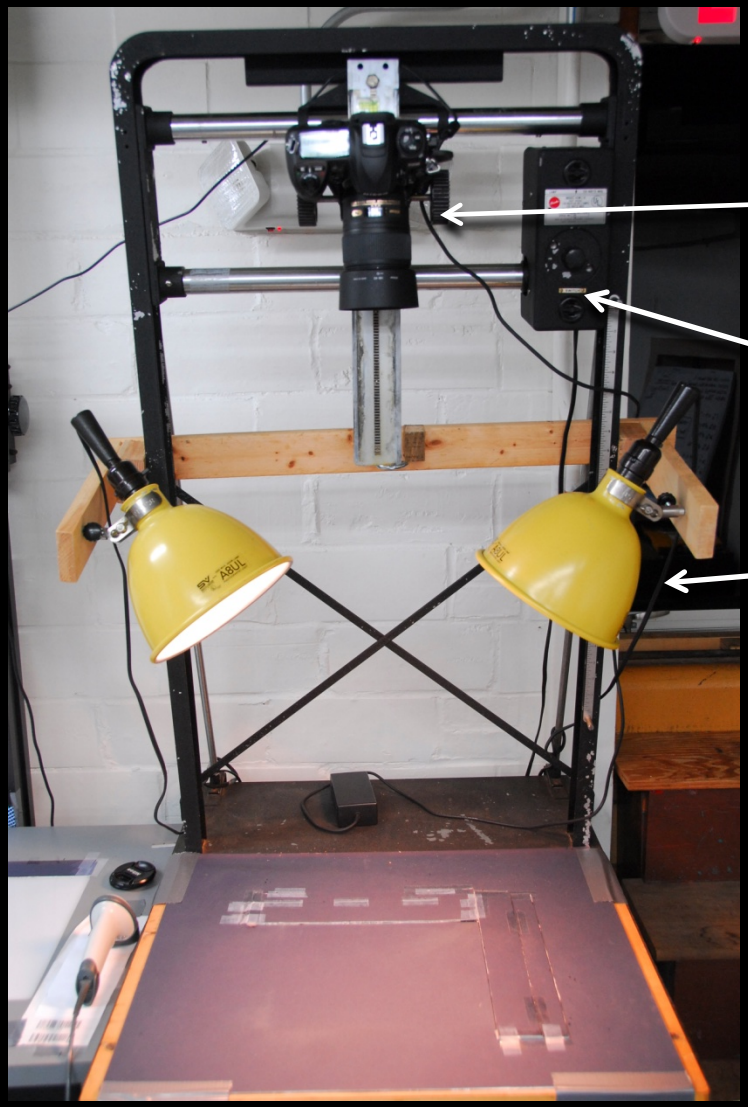
Photographing Metadata

- What you will need
  - A camera, a copy stand, some lights
  - It might look something like this


Nikon Camera
Old Enlarger Stand
Lights

Photographing Metadata

- What you will need
  - A camera, a copy stand, some lights
  - Resolution > 300 PPI
  - Camera should be white balanced
  - Best if there is only one light source (aka no sunlight, or mixing of different color lights)

Making Celestial Plate Photography Personal

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- Fifth, we need to get people excited and interested

Recruitment

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I’m glad you ask ☺

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      - Partnered with the Astronomy League

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      - Partnered with American Museum of Natural History in NYC
    - Government institutions
      - Hoping to work with the Smithsonian

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Transcription Corrections

- What you will need
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  - A computer programmer or an email to DASCH
- What are we doing?
  - Many people, no matter how careful make mistakes when transcribing
  - We need to figure out how to check their work in an automated way

Transcription Corrections

The Program might do something like

•Check to make sure the date always increases with the plate number

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•Check to make sure that the Start time + RA = Obs H.A

Transcription Corrections

The Program might do something like

•Check to make sure the date always increases with the plate number

•Check to make sure that the Start time + RA = Obs H.A

•Check to make sure the Stop – Start = exposure length

Transcription Corrections

- I hear all of you saying, but what about this exception and what about that exception
- There are no rules – so we will just have to do the best we can.
- We must get start and stop time, or mid time and exp length and date for each plate

Transcription Corrections

- All other information can be derived from digitization like RA and Dec

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- …. But David, why should we transcribe the RA, Dec, H.A. Obs. Dec and so many other columns?

Transcription Corrections

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- …. But David, why should we transcribe the RA, Dec, H.A. Obs. Dec and so many other columns?

- We need to know where the plates are located and what objects they cover so astronomers will advocate for their digitization.

Transcription Corrections

We must have enough data to describe the plates to our peers

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Transcription Corrections

We must have enough data to describe the plates to our peers

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We must convince them that we are not only opening a gateway to new science
BUT
Will preserve the history and heritage of our field

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Publishing

Find a website, make a website, attach yourself to a website

Publishing

Find a website, make a website, attach yourself to a website

Publish a paper, print out the list and leave it places, email it to everyone

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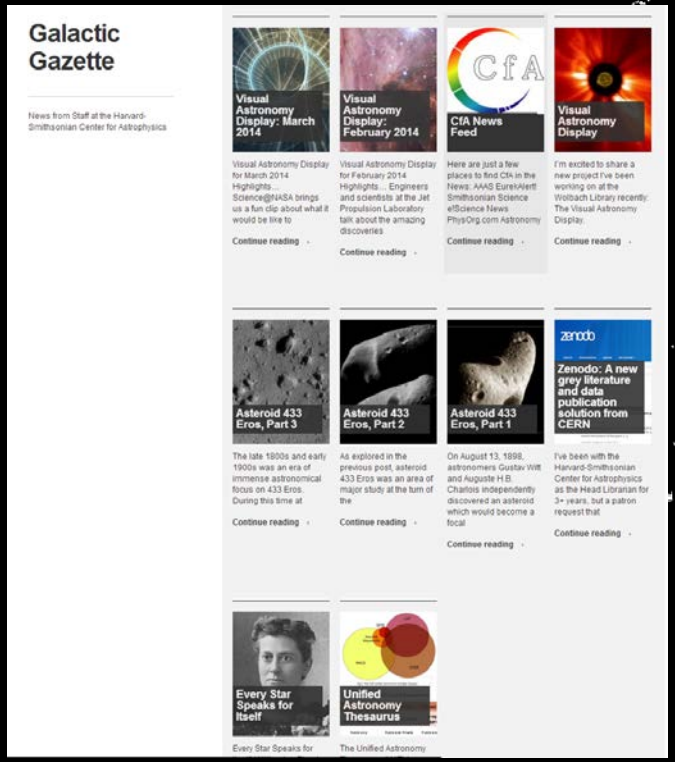
We do our best to find interesting stories and publish them on a blog (government funding anyone?)



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http://altbibl.io/gazette/

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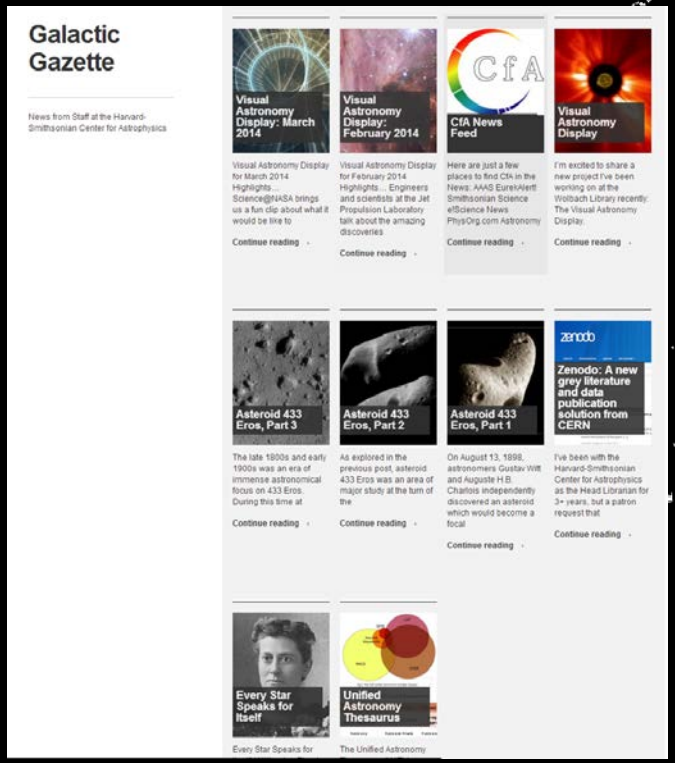
Three part series on Eros

Multi part series about telescopes and their creators on deck next



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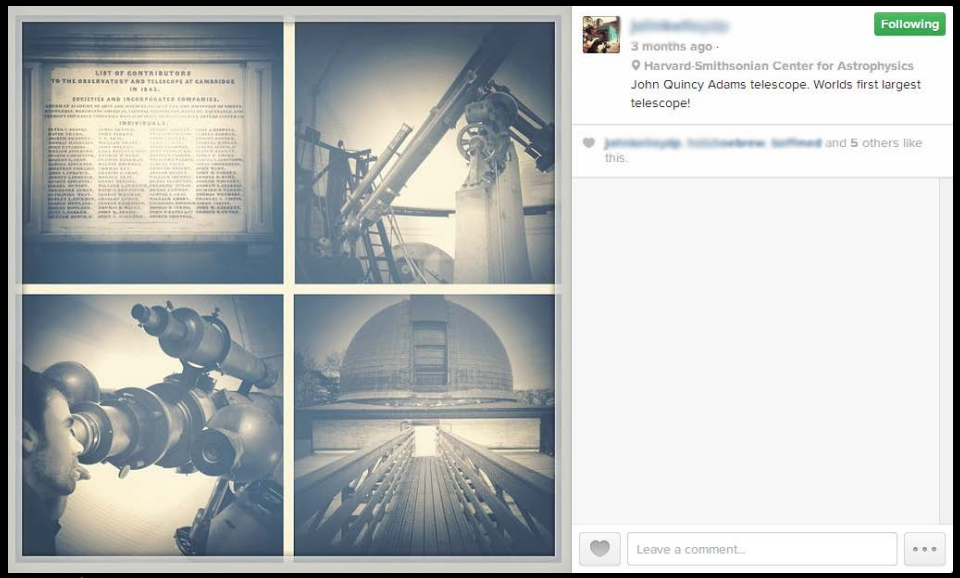

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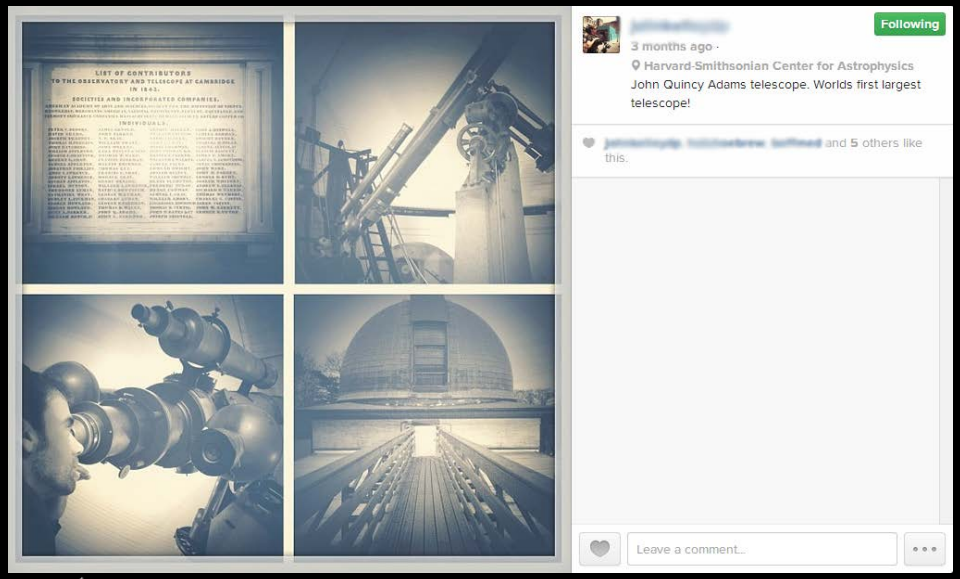

50,000 people saw this photo

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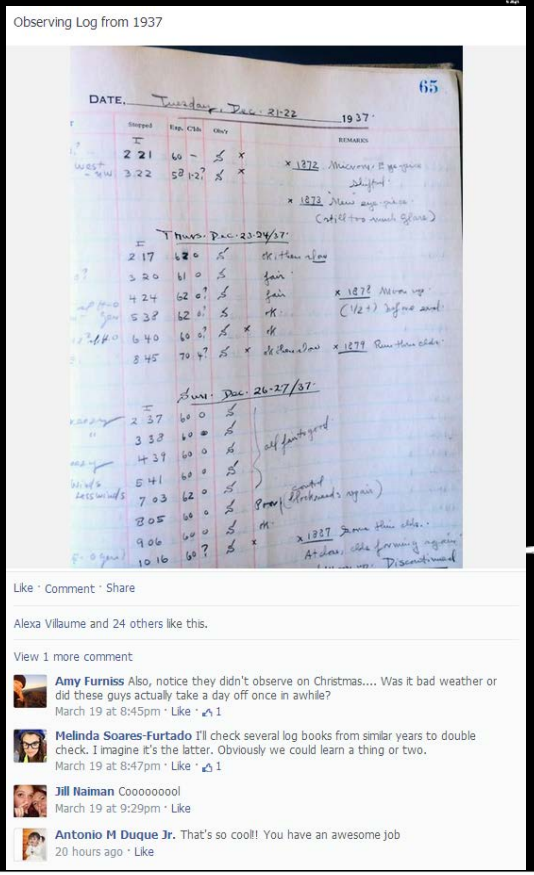

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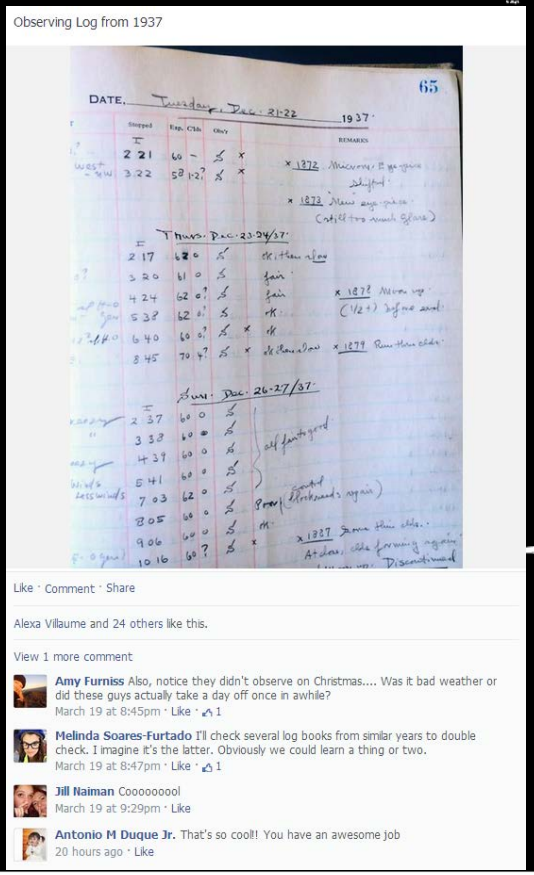
25 people “liked” this picture of a logbook in less than 24 hours



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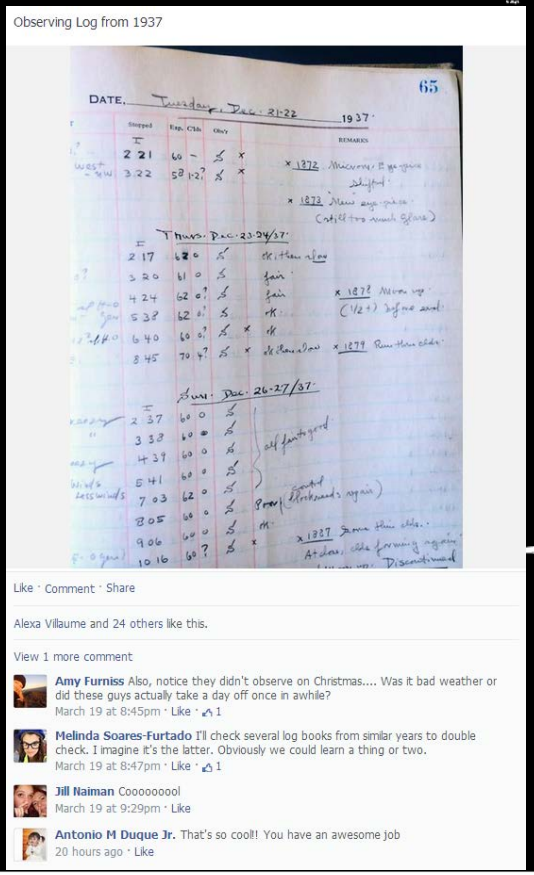

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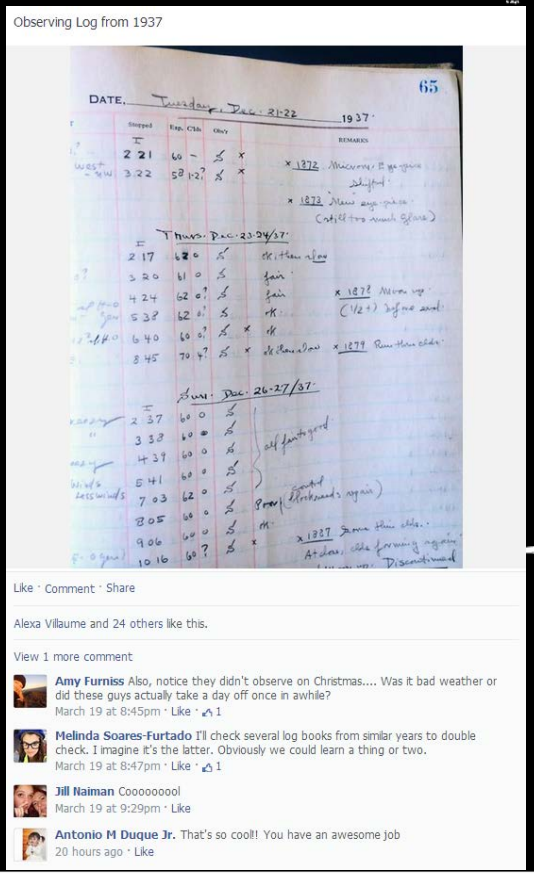
General reaction – Coooooool!



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- ~~Fourth, we need to publish them.~~
  - Ok, we wrote it up, we got it out there… almost there

- Fifth, we need to get people excited and interested

Making Celestial Plate Photography Personal

Making Celestial Plate Photography Personal

Make Celestial Plate Photography Personal

Find someone, find anyone, Tell them about the plates

- There is a new science mission which needs to better accuracy on the position of a target.
-

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• That new female graduate student really seems keen study the stability of stars who harbor exoplanets

Find someone, find anyone, Tell them about the plates

•There is a new science mission which needs to better accuracy on the position of a target.

• That new female graduate student really seems keen study the stability of stars who harbor exoplanets

•There is this amateur group who is really interested in a particular type of variable stars.

Conclusion

- As Josh just explained – the plates are a tremendous resource to the field of astronomy.

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Conclusion

- As Josh just explained – the plates are a *tremendous resource* to the field of astronomy.
- We can't just *tell* people how amazing they are
- We have to *show* them
- The best way to make the *plates personal* is to show them how much data they are missing out on.