



Creating a Data Archive for the UMD Observatory



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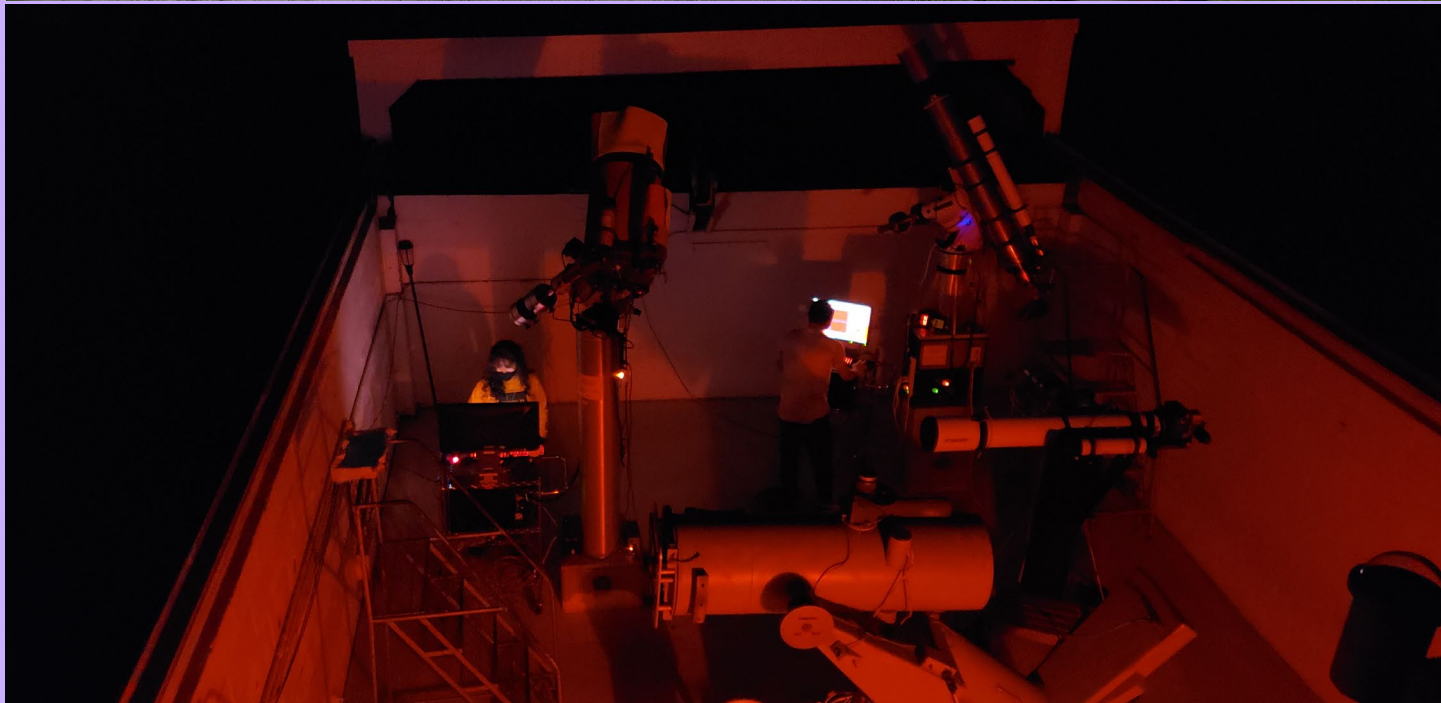
Science, Discovery, and the Universe | Aerospace Engineering

UMD Observatory

This site facilitates hands-on observational research by students in:

- ASTR310
- Explore the Universe (CPS SDU)
- Independent study

Figure 1, above: The observatory. Figure 2, below: Students observing. Photo credits: Elizabeth Warner



Issue Confronting Site

The data collected at the observatory was only accessible online in the form of folders sorted by date, telescope, and target. Many of the files had issues such as:

- inconsistent labels
- loose files
- vague names
- duplicates

Only recent data was even uploaded here and finding anything specific required manually going through each folder.

Figure 3: The old file display. Photo credit: me

20150610_07in_ast-Th.>	2016-05-17 14:07	-
20150616/	2016-05-17 15:44	-
20150624_06in_satell.>	2015-07-01 15:35	1.3G
20150624_06in_satell.>	2016-05-17 14:08	-
20150624_07in_TrESI/	2016-05-17 15:44	-
20150702_Nemausa/	2016-05-17 15:44	-
20150707_06in_ /	2016-05-17 14:10	-
20150711_06in_ /	2016-05-17 14:13	-

Activities

I worked with Ms. Warner to create an inventory spreadsheet (Figure 4) of the available data to:

- Determine what was useful to researchers
- Prepare for logging the data into a database

We carefully sorted through each entry, checking for mistakes, adding what was missing, and renaming/ reorganizing the files.

With the help of Dr. Pound and Dr. Rauch, I then created a table in the new database and populated it with entries from the spreadsheet via command line.

I designed a web page (Figure 5) to display the data from the database in a searchable, responsive table.

- Rows include links to view and download the renamed and reorganized files associated with their data

BASICS				TARGET Info				
Date (YYYYMMDD)	telescope	Do Not Archive	Additional comment	Log included/populated?	Class	Observer(s)	TARGET-type	TARGET-detail
20151006	07in	<input type="checkbox"/>		Populated	ETU	Erick Medina, Daniel Masin, Johnny	nebula	M57, Double-Double
20151006	14in	<input type="checkbox"/>		Populated	ETU	Alexander Honer, Theo Leasca		Double-Double, Veg
20151007	14in	<input type="checkbox"/>		Populated	A310	Christopher Bambic, Anjali Mittu, Jos	nebula	M57, Alberio
20151008	07in	<input type="checkbox"/>		No	A310		star cluster	NGC7243
20151008	14in	<input type="checkbox"/>		Populated	A310	Dan Robinson, Patrick Hemmer, Mer		M57, Alberio
20151010	07in	<input type="checkbox"/>		Populated	A310	Jack Chen, Patrick hemmer	star cluster	NGC7243
20151010	14in	<input type="checkbox"/>		Populated	A310	Quinn Kelly, Mara, Ben	nebula	M57, Alberio
20151011	07in	<input type="checkbox"/>		Populated	A310	Mark Hubbert, Zack Gattland, Shreya	star cluster	NGC7243
20151011	14in	<input type="checkbox"/>		Populated	A310	Joe DeMartini, Molly Grabill	nebula	M57, Alberio
20151014	07in	<input type="checkbox"/>		Populated	A310	Austin Kim Zach Flair Noah Kasman	star cluster	NGC7243
20151014	14in	<input type="checkbox"/>		Populated	A310	Mark Hubbert, Zack Gattland, Michae	nebula	M57, Alberio
20151015	07in	<input type="checkbox"/>		Populated	A310	Anna Engle, Kaitlin Evans, Erika An	star cluster	NGC7243
20151015	14in	<input type="checkbox"/>		Populated	A310	Kaitlin Evans, Anna Engle, Joe DeMi	nebula	M57, Alberio
20151020	07in	<input type="checkbox"/>		Populated	ETU	Theo Leasca, Joe Wolford, Sherwin F	nebula	M57, Altair, Nunki
20151020	14in	<input type="checkbox"/>		Populated	ETU	Alex Honer, Johnny Yu	ast occultation	Nunki, M57
20151021	07in	<input type="checkbox"/>		Populated	A310	Noah Kasmanoff, Kyle Elliot, Alyssa	star cluster	NGC7243
20151021	14in	<input type="checkbox"/>		Populated	A310	Kyle Elliott, Alyssa Pagan, Noah Ka	nebula	M57, Alberio
20151023	14in	<input type="checkbox"/>		Populated	A310	Craig Weiss, Jack Chen, Austin Kim	nebula	M57, Alberio
20151103	07in	<input type="checkbox"/>		Populated	ETU	Johnny Yu and Alex Honer	exoplanet transit	WASP-52b, Alpha
20151103	14in	<input type="checkbox"/>		Populated	ETU	Erick Medina, Theo Leasca	star cluster	NGC 7331 and Step
20151117	07in	<input type="checkbox"/>		Populated	ETU	Johnny Yu and Alex Honer		
20151117	14in	<input type="checkbox"/>		Populated	ETU	Theo Leasca		
20151208	07in	<input type="checkbox"/>		Populated	ETU	Johnny Yu and Alex Honer	exoplanet transit	HD189733

Figure 4: A small part of the inventory spreadsheet. Photo credit: me

Astronomy Observatory
Department of Astronomy, University of Maryland
College Park, MD

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Next Open House
In order to meet necessary precautions, the Observatory remains closed to in-person public activities.
[About Open House](#)

Other Programs
Coming up:
• VIRTUAL :: 12 Dec NCA meeting, 7:30pm
• This you can do on your own!! 6-15 Dec: [Globe at Night](#) Observe Perseus!
Mark your calendar!

Data Archive
Some text about the archive!
Show entries
Search:

Select	View	Date	Telescope	Type	Target
Download	Browse	2012-09-13	06	Exoplanet Transit	WASP-3b
Download	Browse	2012-09-13	07	Exoplanet Transit	WASP-3b
Download	Browse	2012-09-07	06	Exoplanet Transit	HD 209458-b
Download	Browse	2012-06-20	06	Exoplanet Transit	WASP-3b
Download	Browse	2012-06-19	06	Exoplanet Transit	HD 189733-b
Download	Browse	2012-06-19	14	Exoplanet Transit	HAT-P-7b
Download	Browse	2012-06-16	06	Exoplanet Transit	TrES-1b
Download	Browse	2012-06-13	06	Exoplanet Transit	TrES-1b
Download	Browse	2011-12-18	06	Exoplanet Transit	HAT-P-20b
Download	Browse	2011-12-01	06	Exoplanet Transit	HAT-P-30b

Showing 1 to 10 of 33 entries
Previous 1 2 3 4 Next

Figure 5: The current webpage displaying the data archive table. Photo credit: me
<https://www.astro.umd.edu/openhouse/7research/>

Impact

Now that all the relevant data taken at the observatory is easier to search for and access, anyone who wants to use it in their research can do so without hassle.

- Future college and high school students will have an easier time finding and comparing data.
- The general public will also have access to all of the data for the first time

We have already used the spreadsheet for finding relevant data for the Maryland Day 2021 video.

What I gained:

- Learned the basics of astrophotometry and archival work
- Built on my knowledge of astronomy
- Improved my web development and database management skills

Future Work

Improvements that can be made:

- A more efficient way to upload large amounts of data to the database
- A web form for new entries to be easily added by students as they make more observations
- Ability to select multiple rows to download at once

Acknowledgements

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