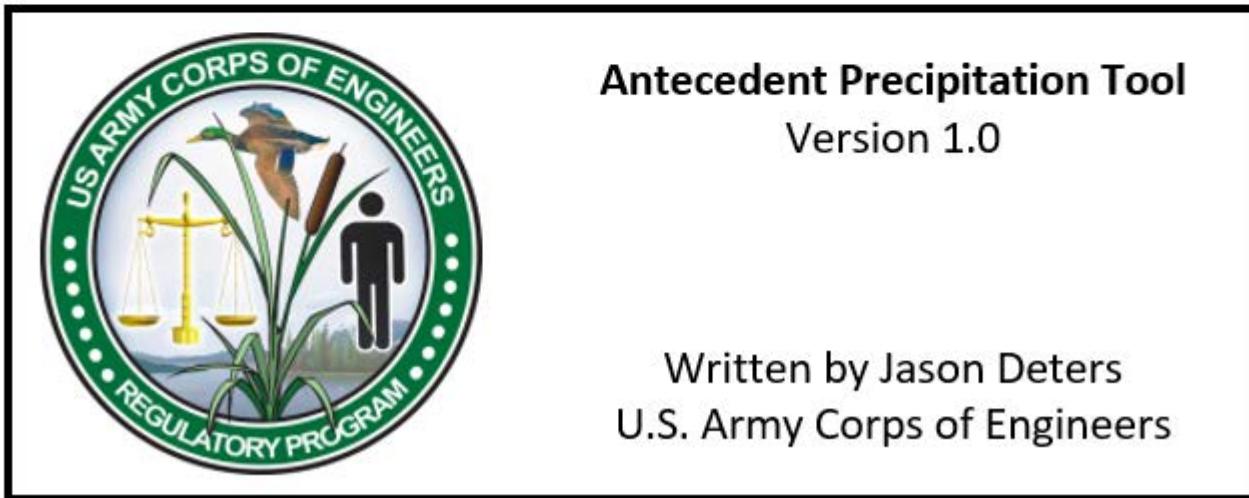
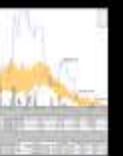


# How to Generate a Single-point Analysis for Many Dates at Once Using CSV Input





Antecedent  
Precipitation  
Tool



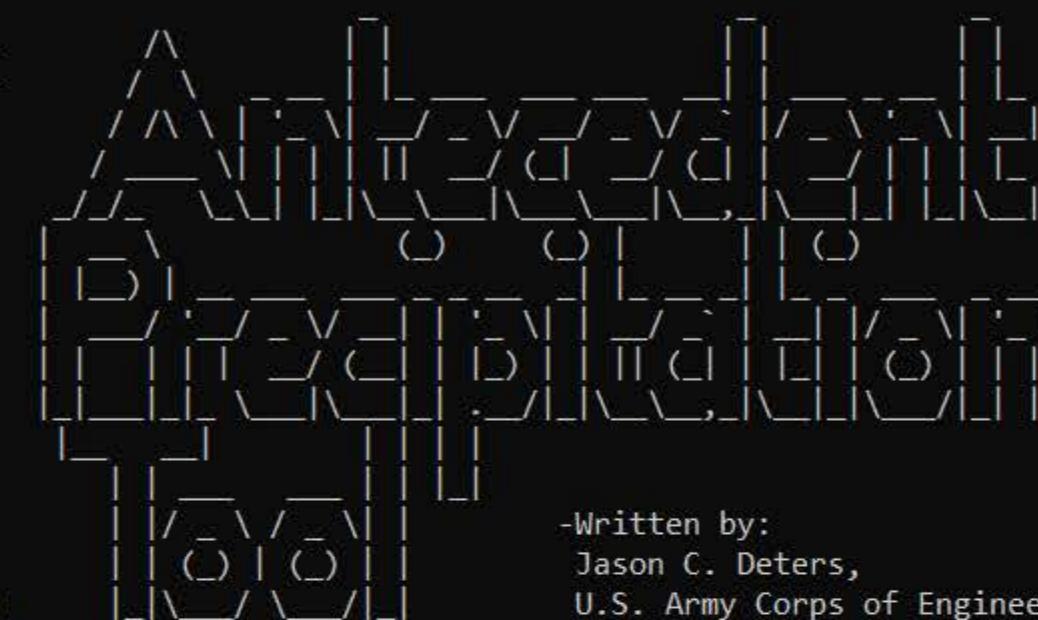
Launch  
the APT





Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyyhhMMMMMMMyyyyyyhdMMMsodMMMs  
dMMMs  
dMMMs  
dMMNyyMMMMMyymMMh+  
dMMm MMMMM dMN  
dMMm MMMMM+ dMM  
+dMMm++MMMMMdNMM  
hMMMMNNMMMMMMMM  
hMMMMNNMMMMMMNN  
ymm



-Written by:  
Jason C. Deters,  
U.S. Army Corps of Engineers

Launching Graphical User Interface...

Enter the Latitude and Longitude of the location to be analyzed in Decimal Degree format (DD.ddddddd)

**NOTE:** Longitudes in the U.S. are negative, so your entry should start with a minus "-" symbol.

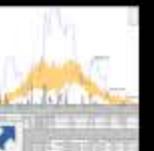
Latitude (DD):      Longitude (-DD):      Scope

Run a single date or click "+" to add more

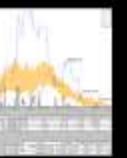
# YYYY-MM-DD

1 [ ] . [ ] . [ ] +

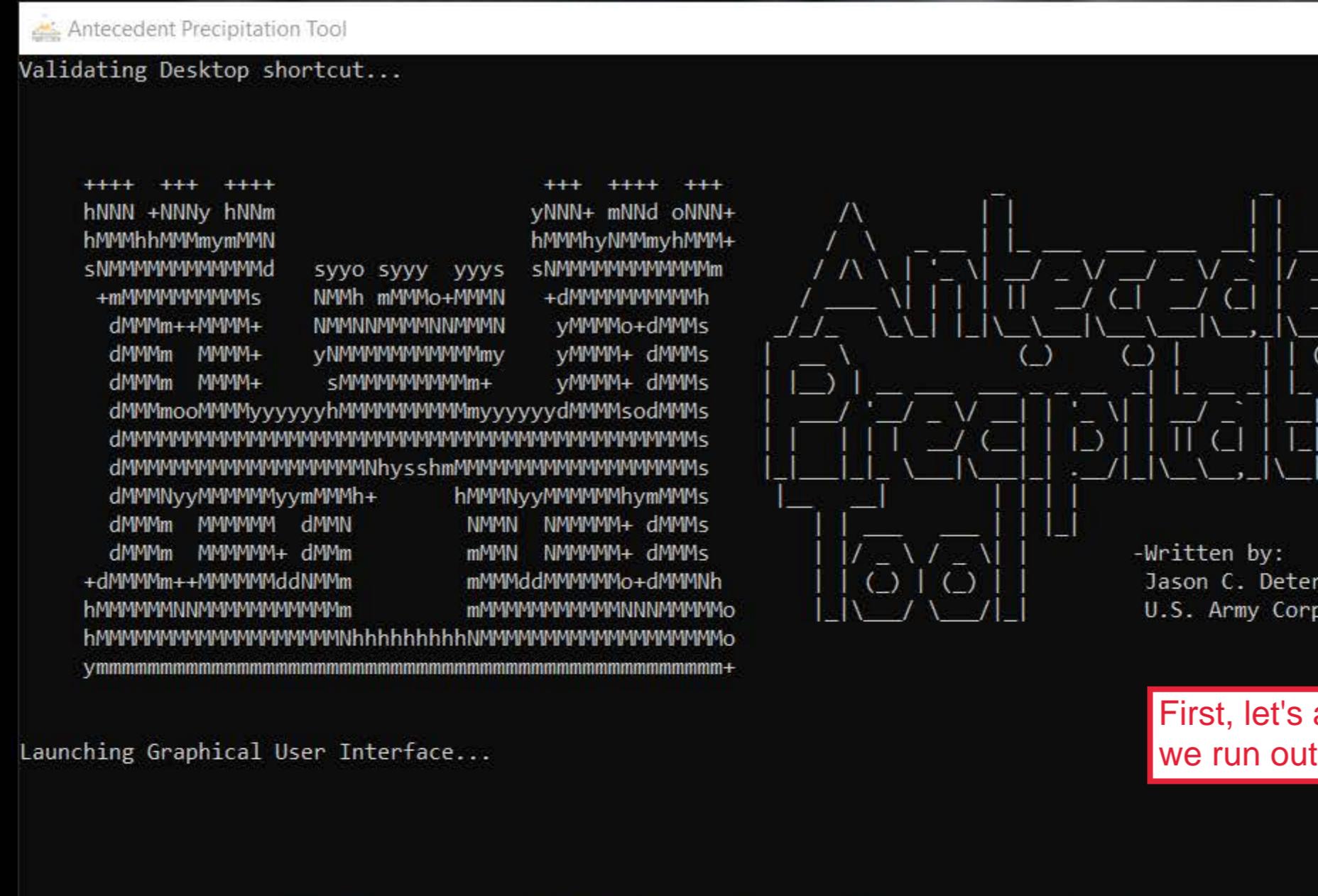
Calculate      Switch to Date Range      Quit



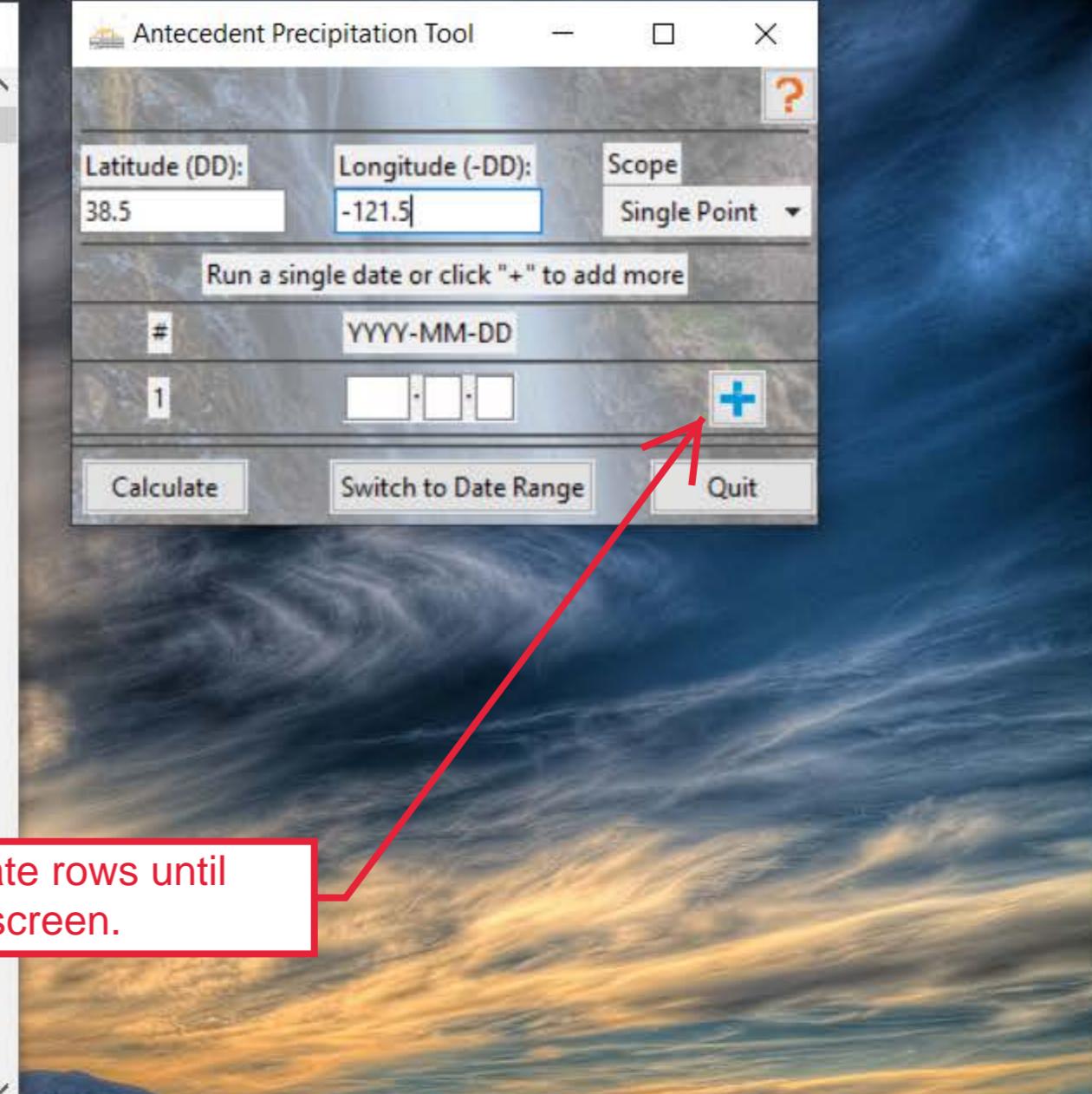
Antecedent Precipitati...



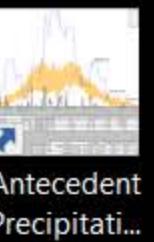
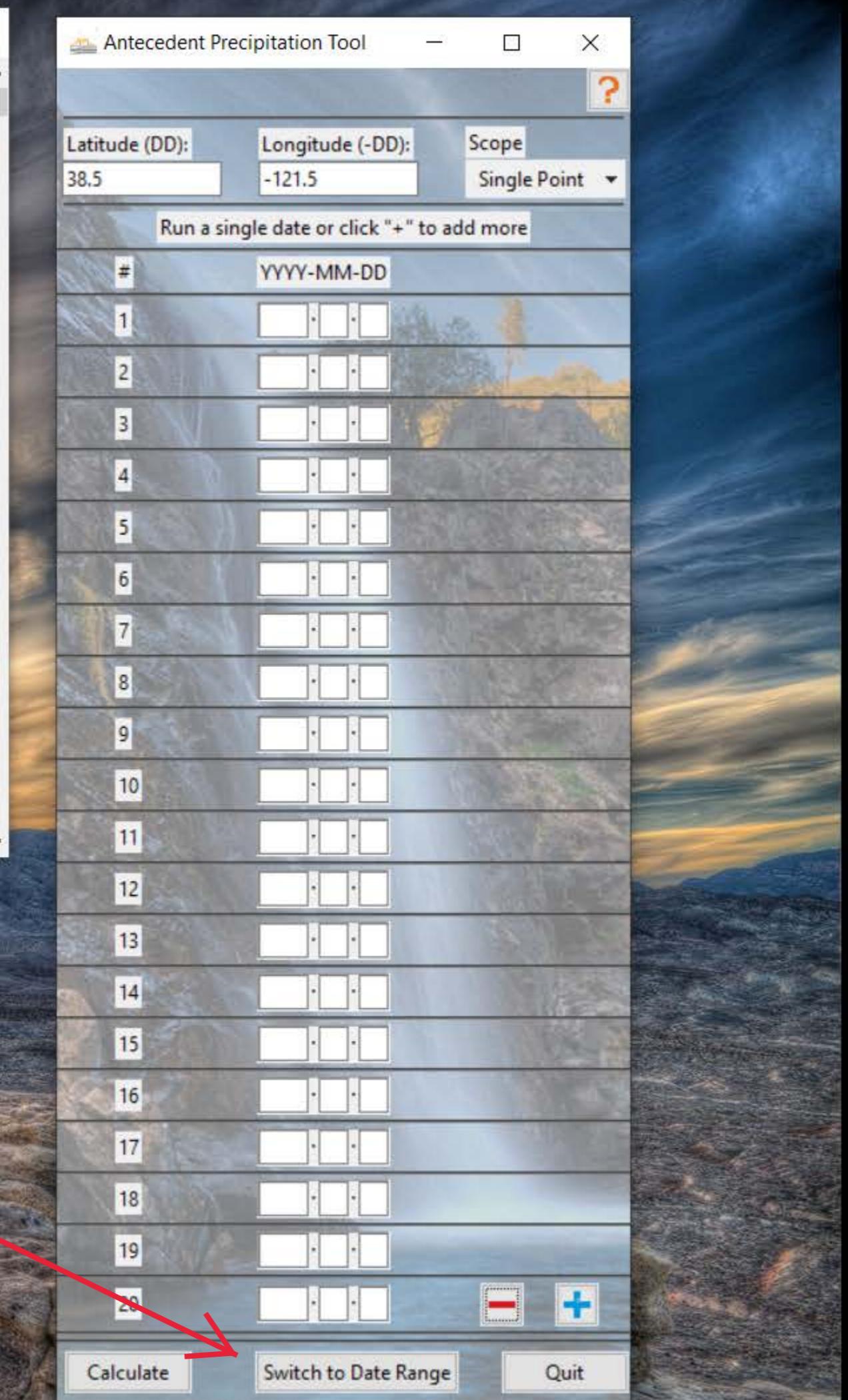
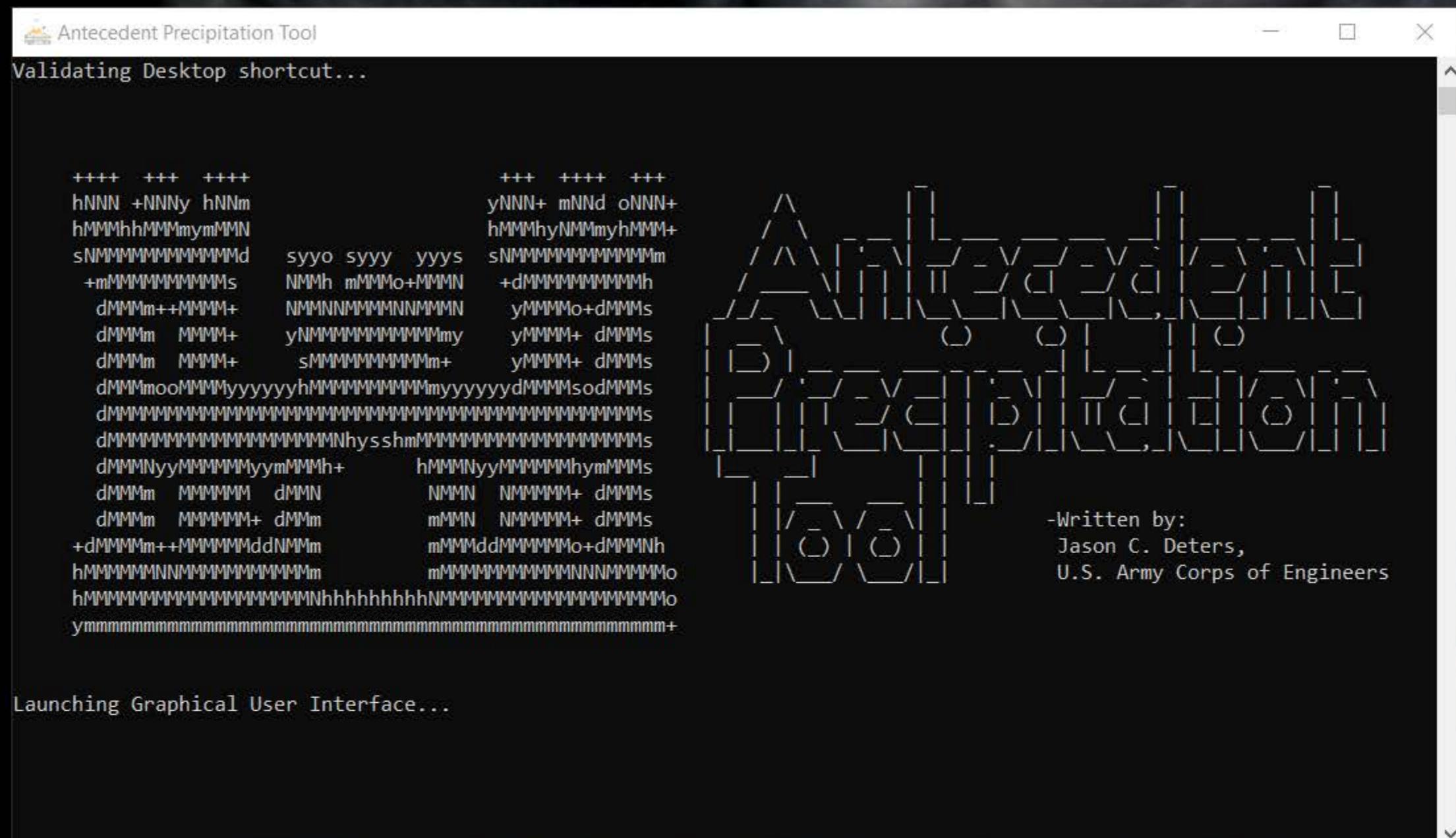
## Antecedent Precipitati...

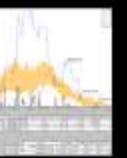


## Launching Graphical User Interface...



First, let's add additional date rows until we run out of room on the screen.





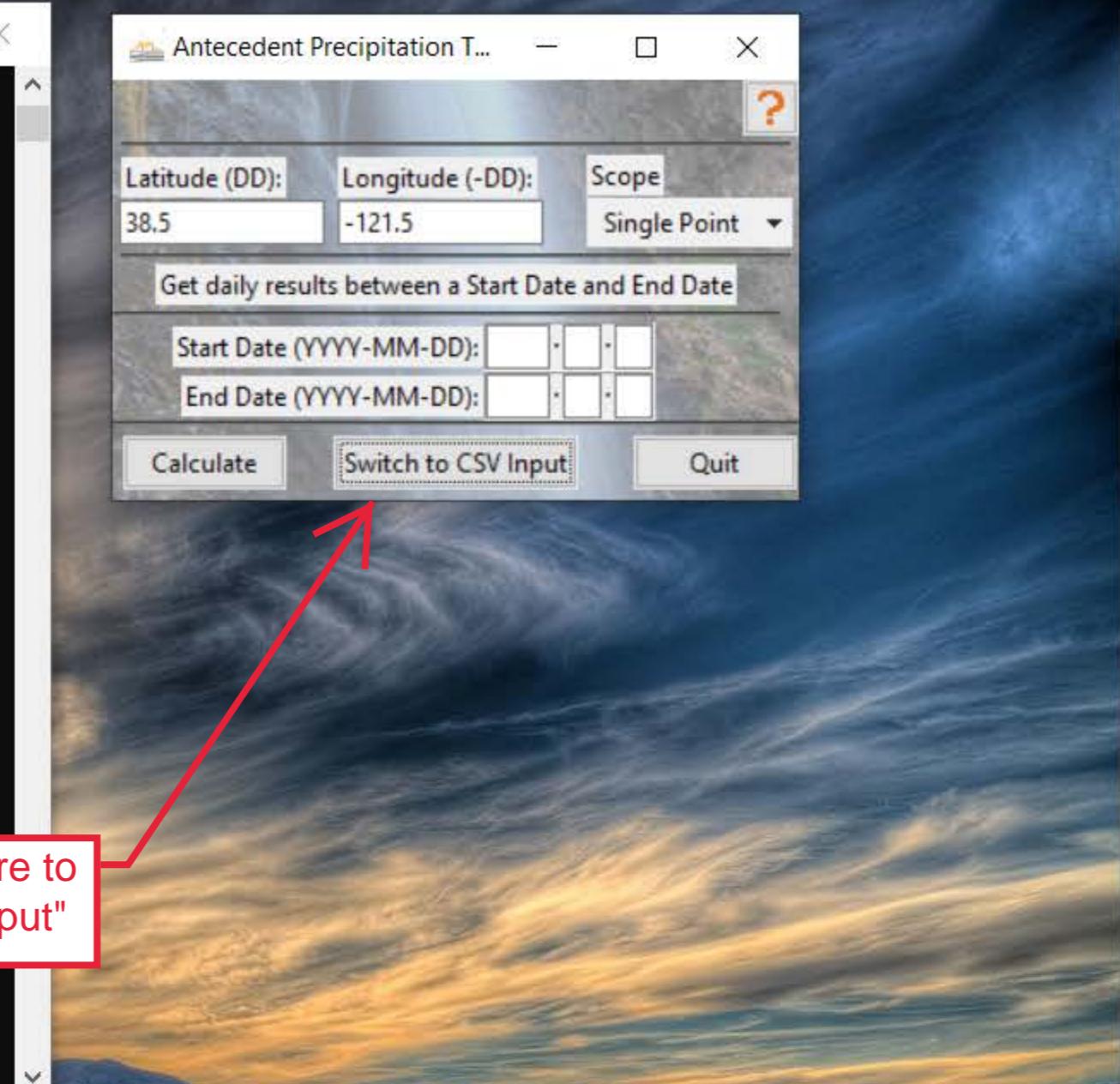
### Antecedent Precipitati...



Validating Desktop shortcut...



Launching Graphical User Interface...



-Written by:  
Jason C. Deters,  
U.S. Army Corps of Engineers

Click once more to  
get to "CSV Input"



Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm+++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyyhhMMMMMMMMMyyyyyydMMMsodMMMs  
dMMMs  
dMMMs  
dMMMNyyMMMMMyymMMh+  
dMMm MMMMM dMN  
dMMm MMMMM+ dMM  
+dMMm+++MMMMMdNMM  
hMMMMNNMMMMMMMM  
hMMMMNMhyyyyyhhh  
ymm



-Written by:  
Jason C. Deters,  
U.S. Army Corps of Engineers

Launching Graphical User Interface...



Latitude (DD): 38.5 Longitude (-DD): -121.5 Scope: Single Point

Use a CSV file to run many dates at once

CSV File Path:



Calculate

Switch to Unique Dates

Quit



Antecedent  
Precipitati...



Validating Desktop shortcut...

hNNN +NNNy hNNm  
hMMMhhMMMyMymMMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMMd++MMMM+  
dMMMd MMMM+  
dMMMd MMMM+  
dMMMdooMMMyyyyyyhy  
dMMMMMMMMMMMMMM  
dMMMMMMMMMMMMMM  
dMMMNyyMMMMMyymMM  
dMMMd MMMMM dMMI  
dMMMd MMMMM+ dMMI  
+dMMMd++MMMMMd  
hMMMMMMNNMMMMMM  
hMMMMMMMMMMMMMM  
ymmmmmmmmmmmmmm

syyo syyy yyys  
NMMh mMMMo+MMMN  
NMMNNMMMMNNMMMN  
yNMMMMMMMMMMMy  
sMMMMMMMMMMM+  
dMMMMMMMMMM  
yMMMM+ dMMMs  
yMMMM+ dMMMs  
dMMMsodMMMs  
dMMMMMMMMMMMM  
dMMMMMMMMMMMM  
dMMMNyyMMMMMyymMM  
dMMMd MMMMM dMMI  
dMMMd MMMMM+ dMMI  
+dMMMd++MMMMMd  
hMMMMMMNNMMMMMM  
hMMMMMMMMMMMMMM  
ymmmmmmmmmmmmmm

There will always be a file "Template.csv" in the default folder.

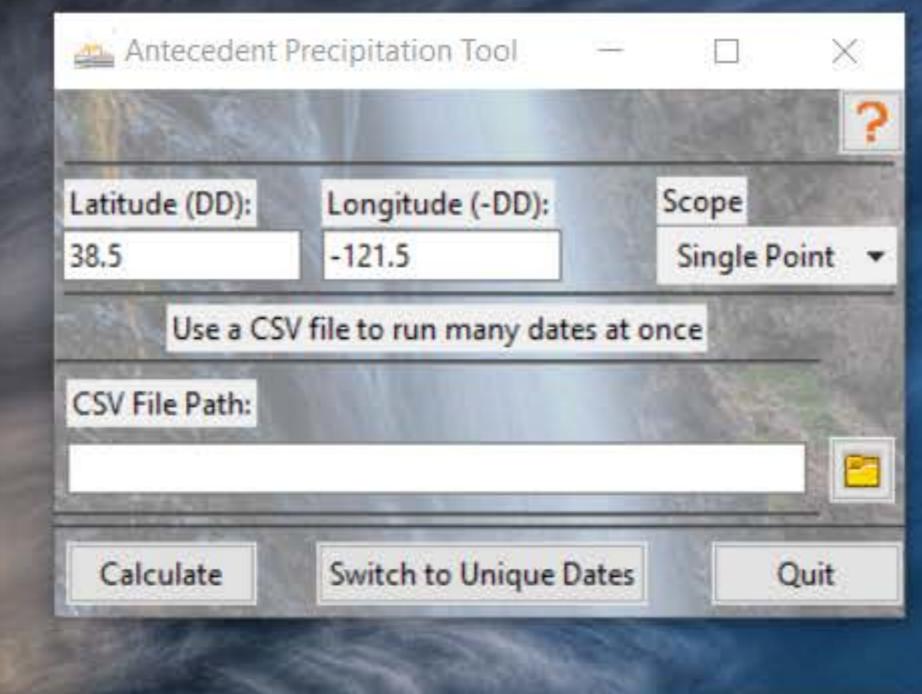
You can quickly edit this file to serve as your Input CSV.

There will always be a file titled "APT Batch Template.csv" in the default folder.

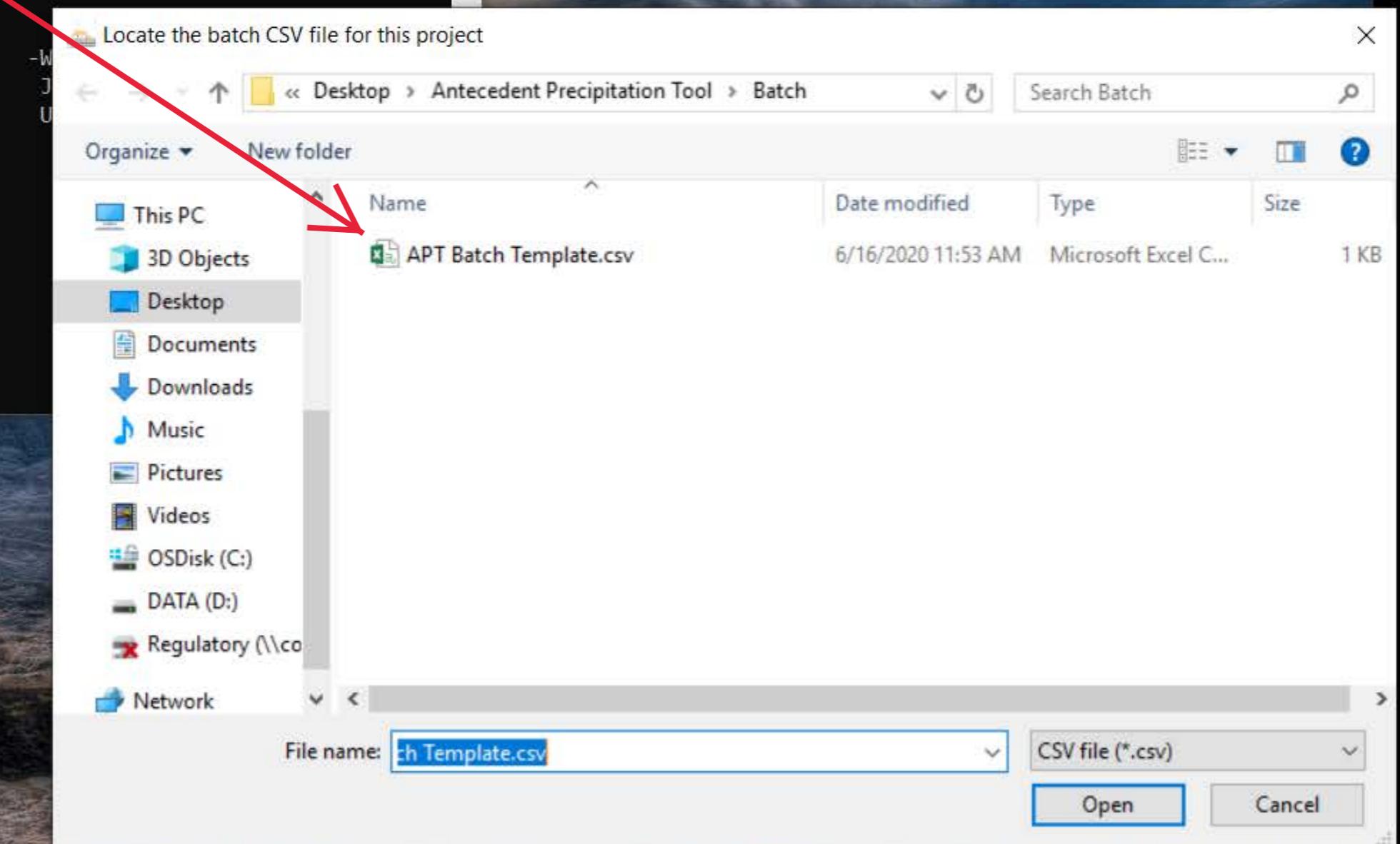
You can quickly edit this file and save it to serve as your Input CSV.

Start by right-clicking on the file.

## Launching Graphical User Interface...



## Antecedent Precipitati...



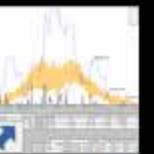
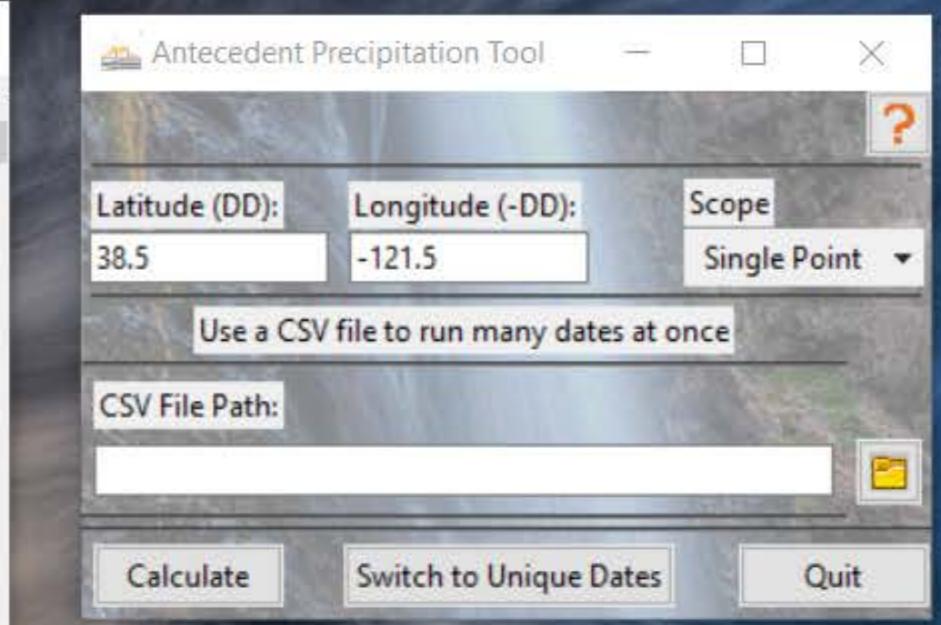


Antecedent Precipitation Tool  
Validating Desktop shortcut...

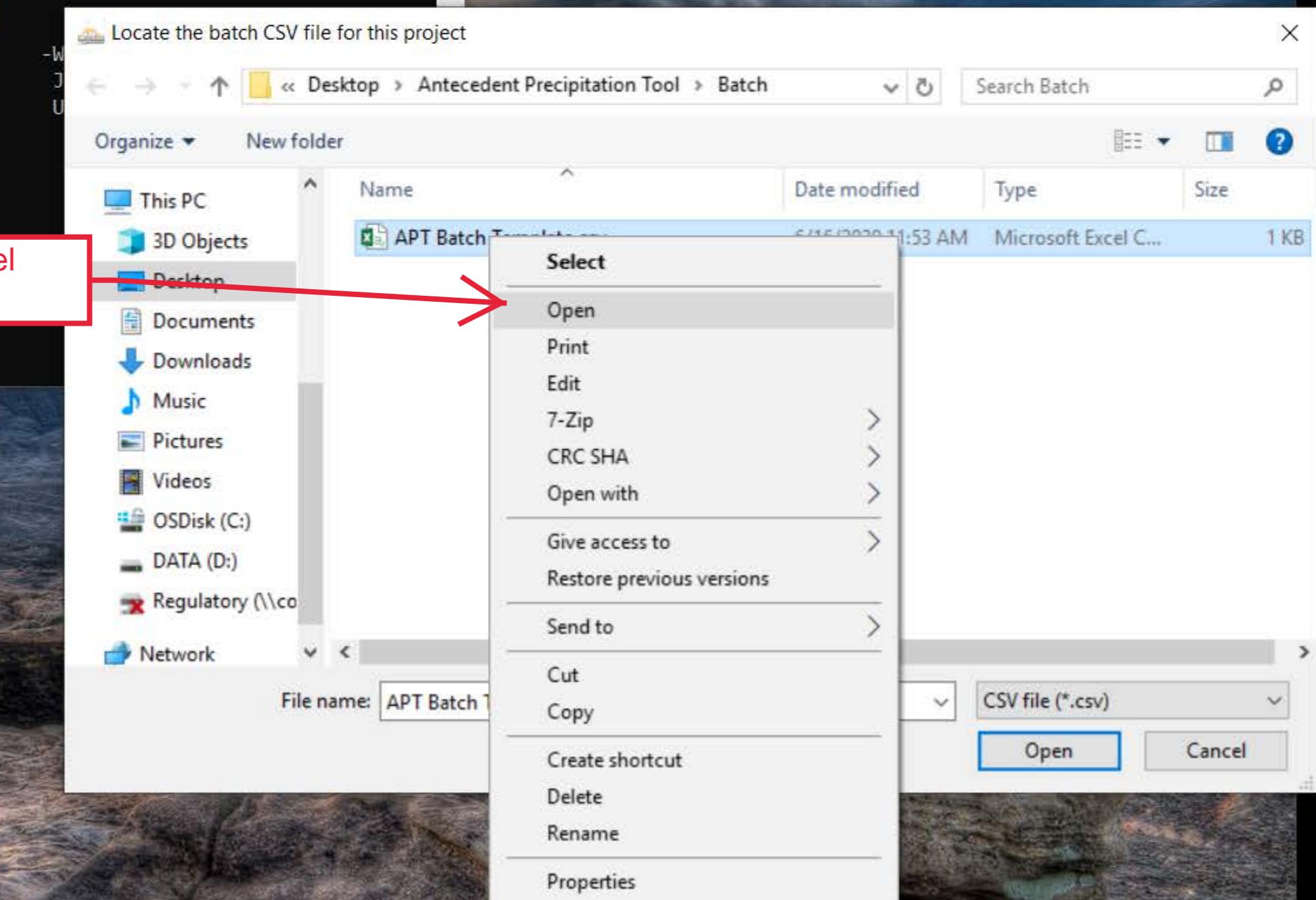
++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMNyyMMMMMyymMMh+ hMMNyyMMMMMyhmMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMm  
+dMMm++MMMMMdNMm  
hMMMMMNMMMMMMMMm  
hMMMMMMMMMMMMMNhhhhhhhNMMMMMMMMMMMMMMMo  
ymmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm+

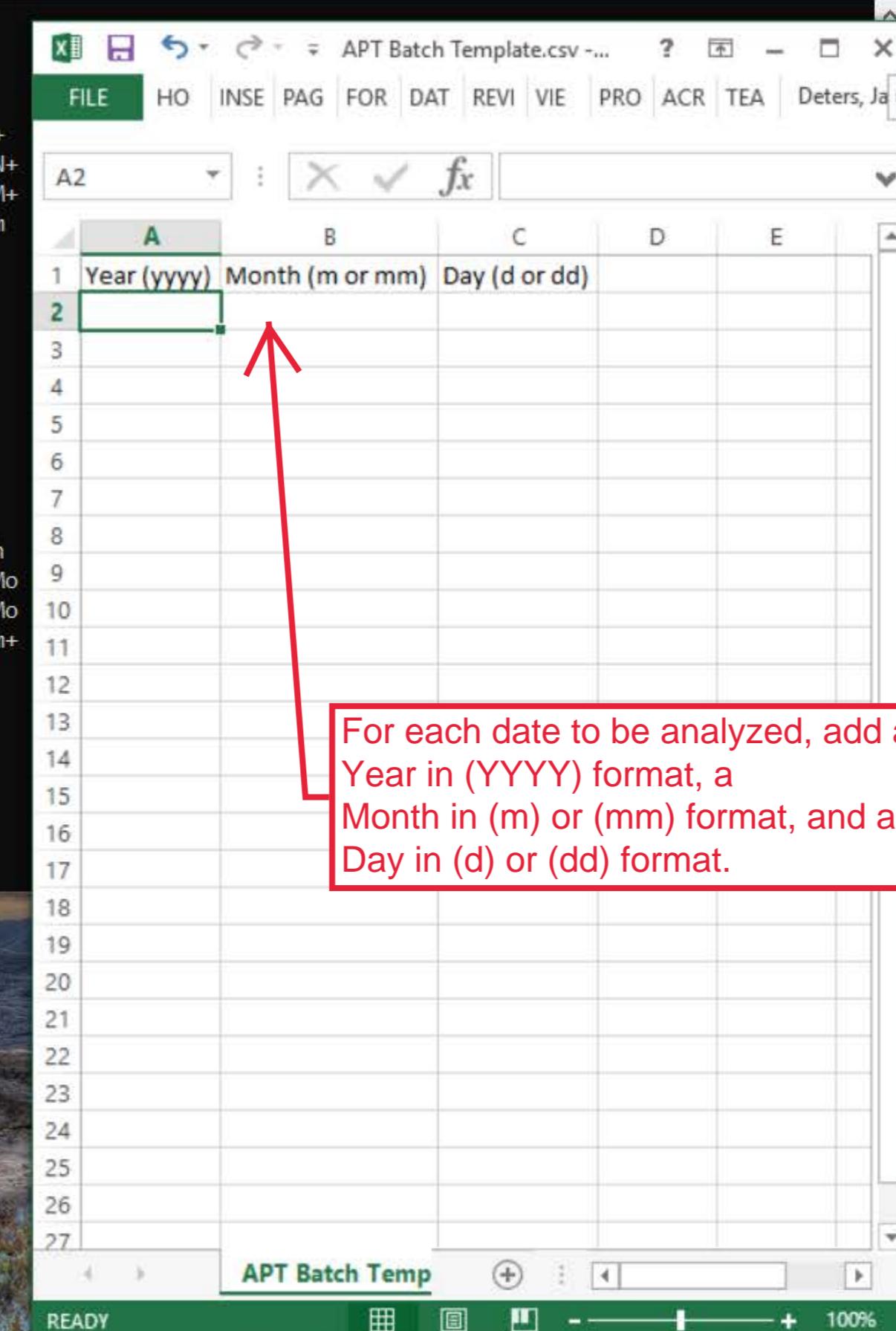
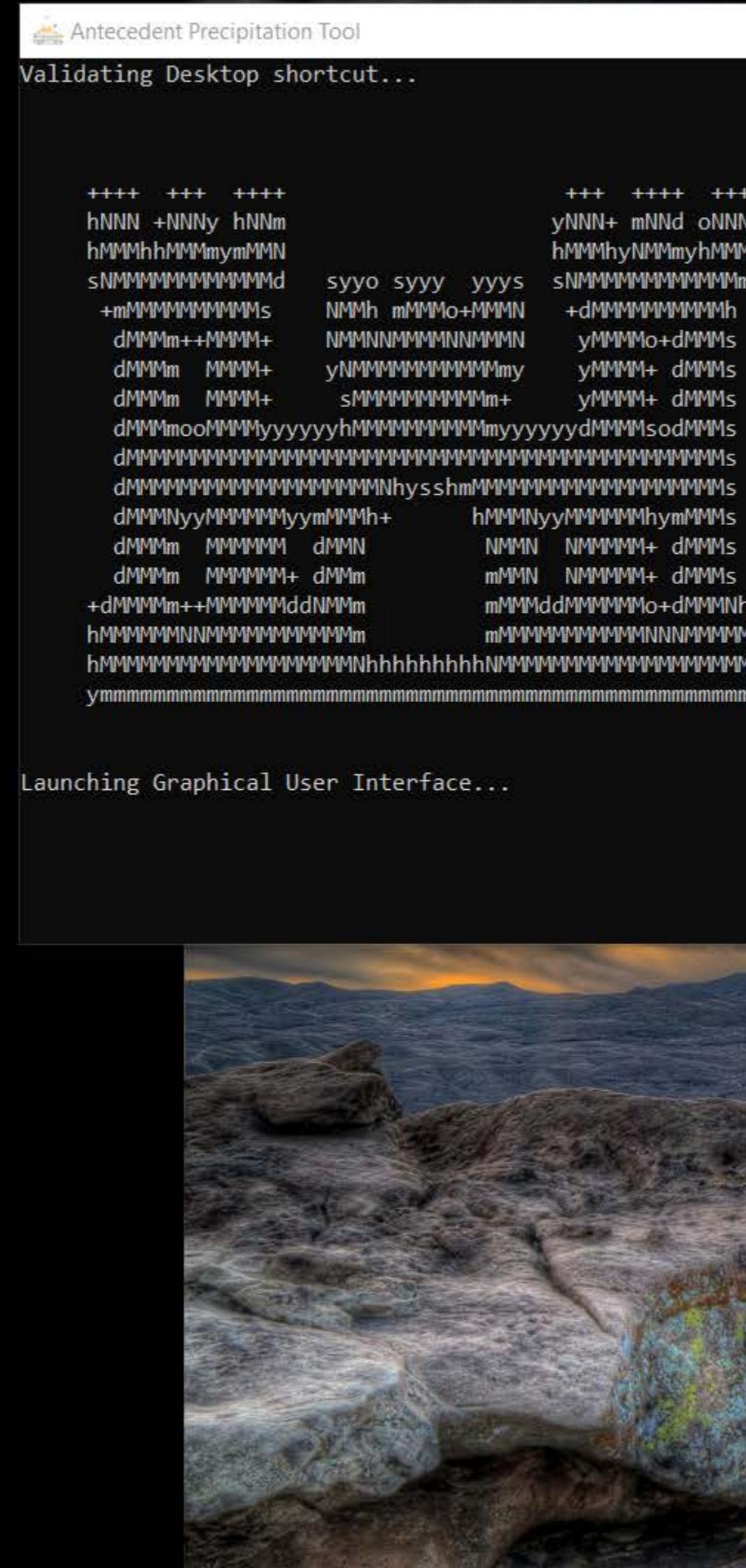
Launching Graphical User Interface

Now select "Open" to open the file in Excel  
(or your preferred spreadsheet editor).

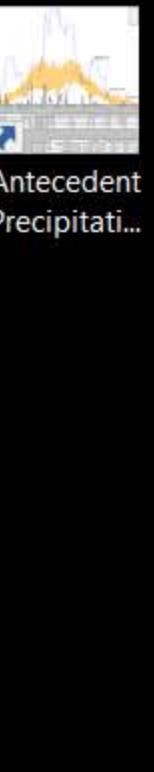
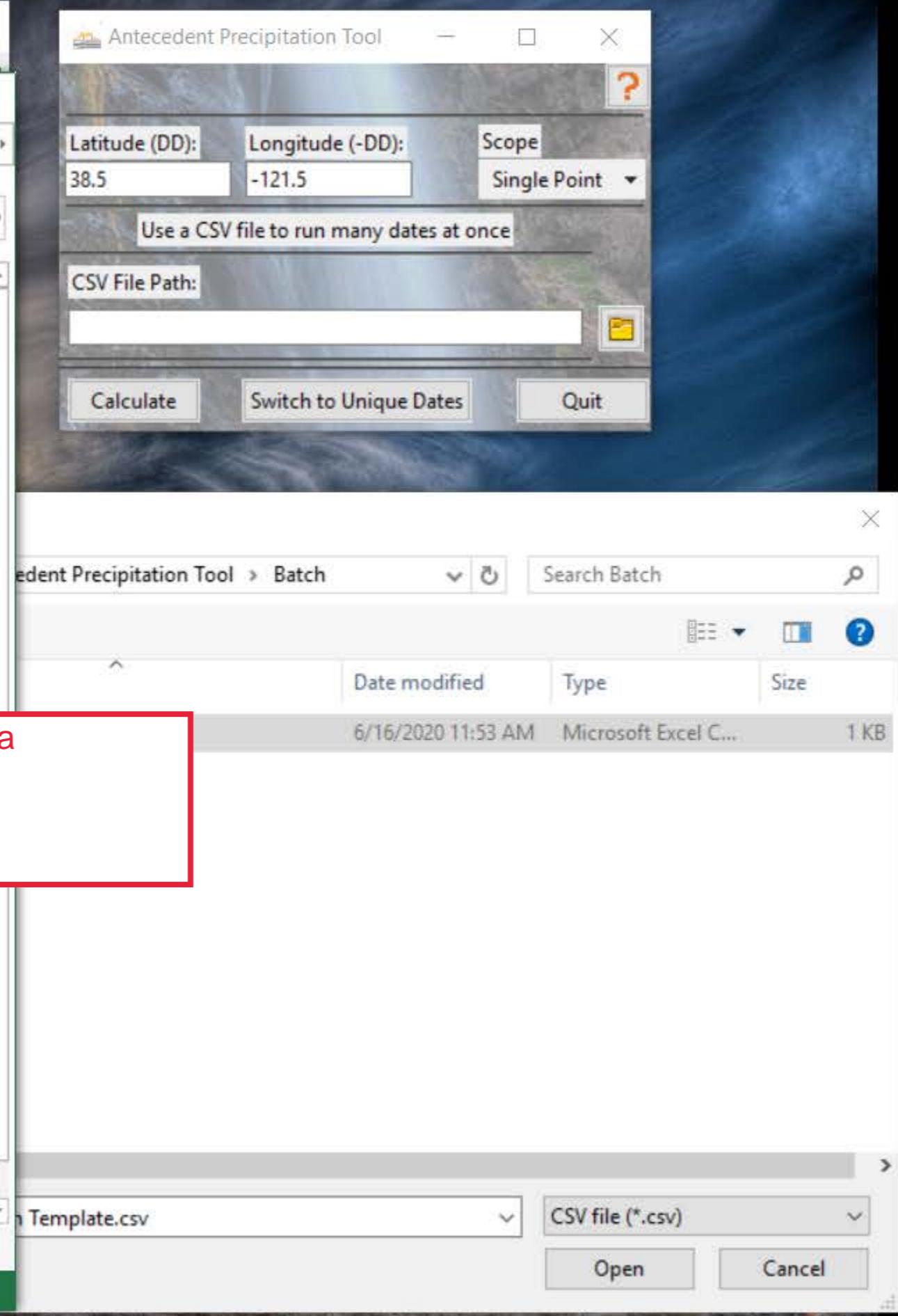


Antecedent  
Precipitati...





For each date to be analyzed, add a Year in (YYYY) format, a Month in (m) or (mm) format, and a Day in (d) or (dd) format.



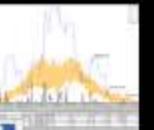
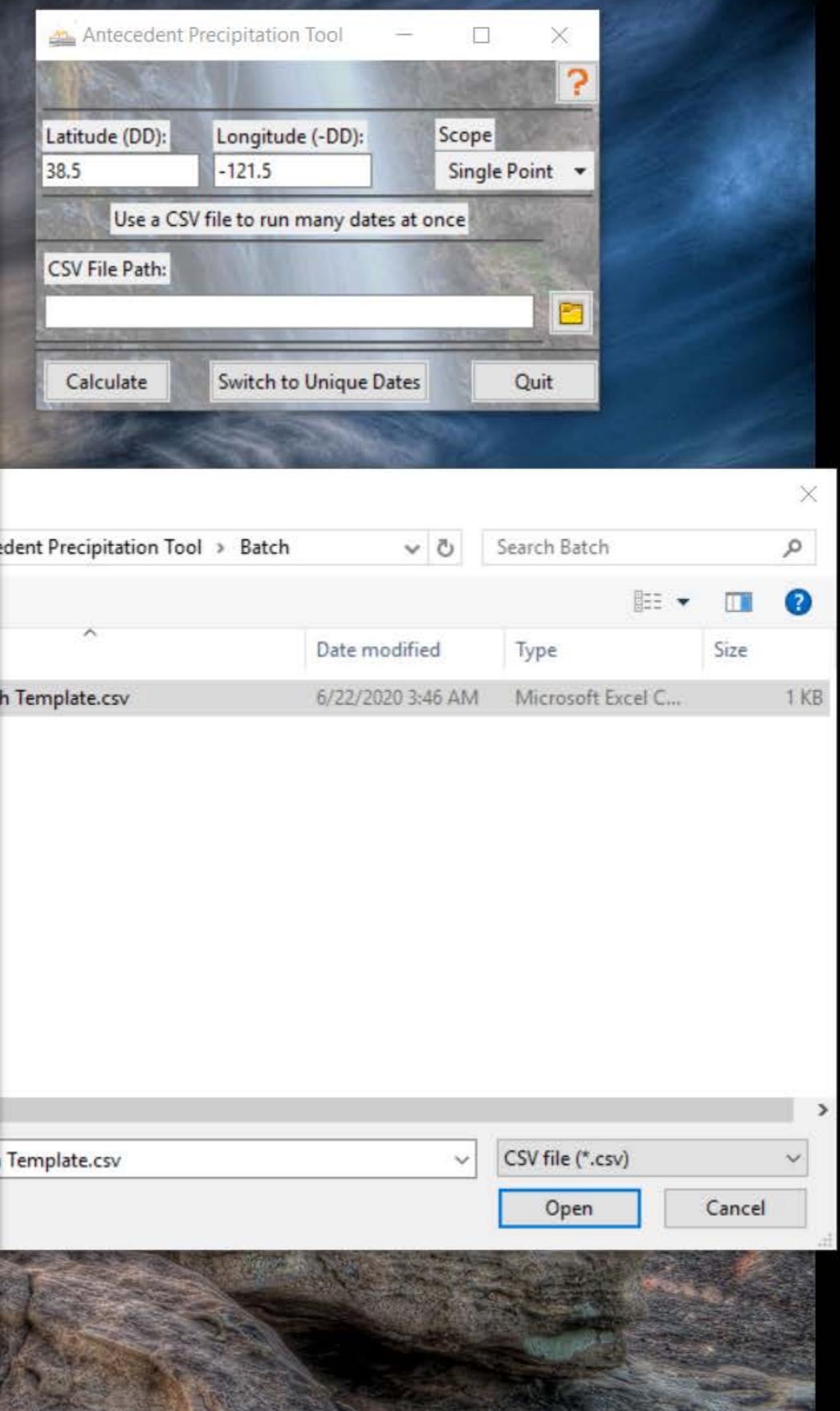


Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMMN  
sNMMMMMMMMMMMd  
+mMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyMMMMMyymMMh+ hMMNyMMMMhymMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMMm  
+dMMm++MMMMMdNMMm  
hMMMMNNMMMMMMNm  
hMMMMNMHHHHHHHNMhhhhhhhNMHHHHHHHNMHHHHHHHNM  
ymm

	FILE	HO	INSE	PAG	FOR	DAT	REVI	VIE	PRO	ACR	TEA	Deters, Ja	...
	B31												
2	1967		10			31							
3	1969		1			22							
4	1972		4			10							
5	1972		9			2							
6	1973		3			15							
7	1973		5			18							
8	1978		3			7							
9	1979		2			2							
10	1980		6			5							
11	1982		5			28							
12	1986		1			1							
13	1986		4			22							
14	1987		11			12							
15	1989		12			15							
16	1990		2			14							
17	1990		5			11							
18	1990		9			13							
19	1991		2			4							
20	1991		4			8							
21	1991		11			29							
22	1994		8			26							
23	1995		12			3							
24	1995		12			19							
25	1997		2			1							
26	1997		4			12							
27	1998		6			6							
28	1998		9			2							
29	2000		4			24							
30	2001		3			10							
31	2002		10			30							

Launch:

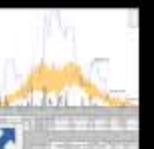
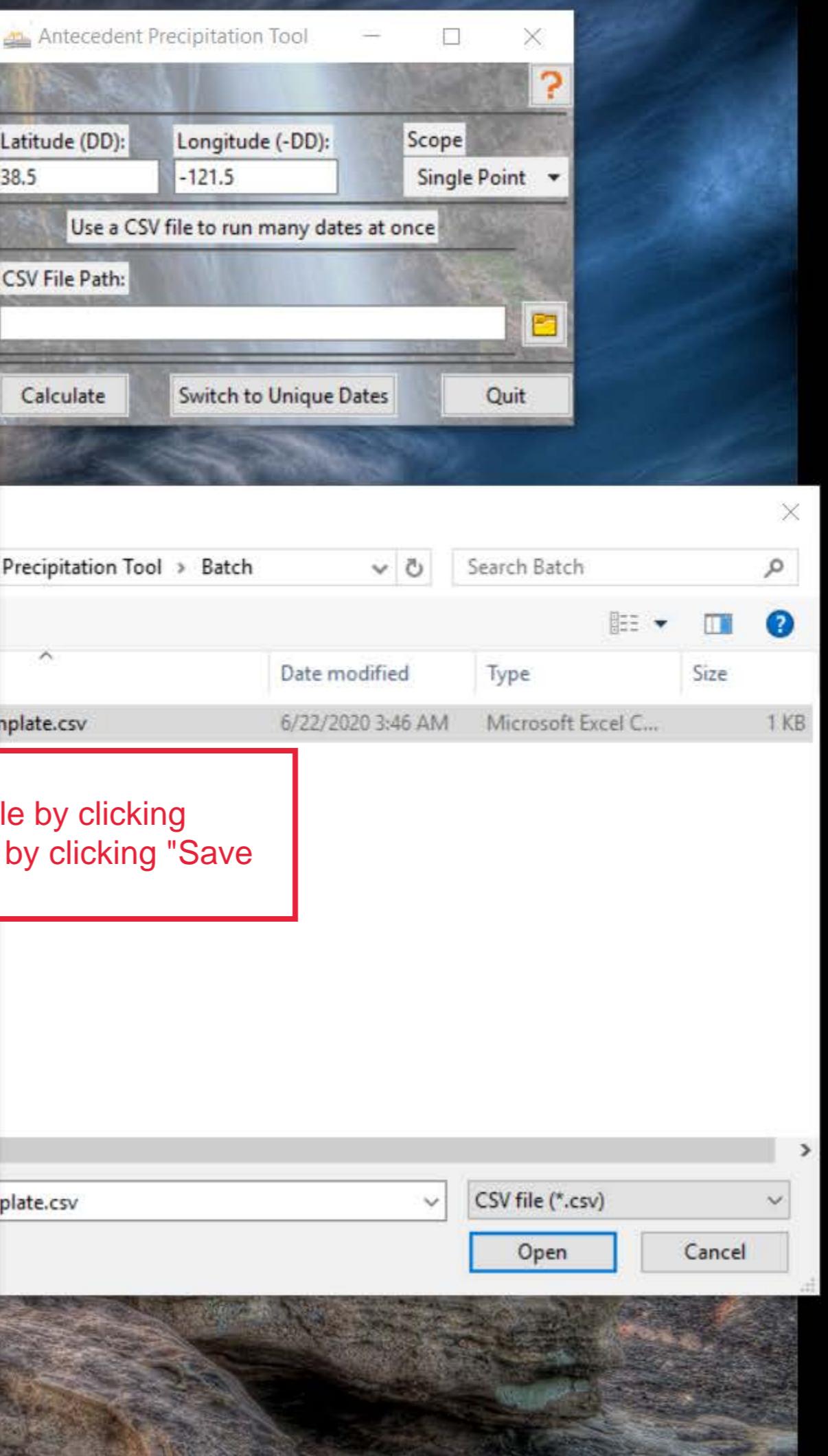
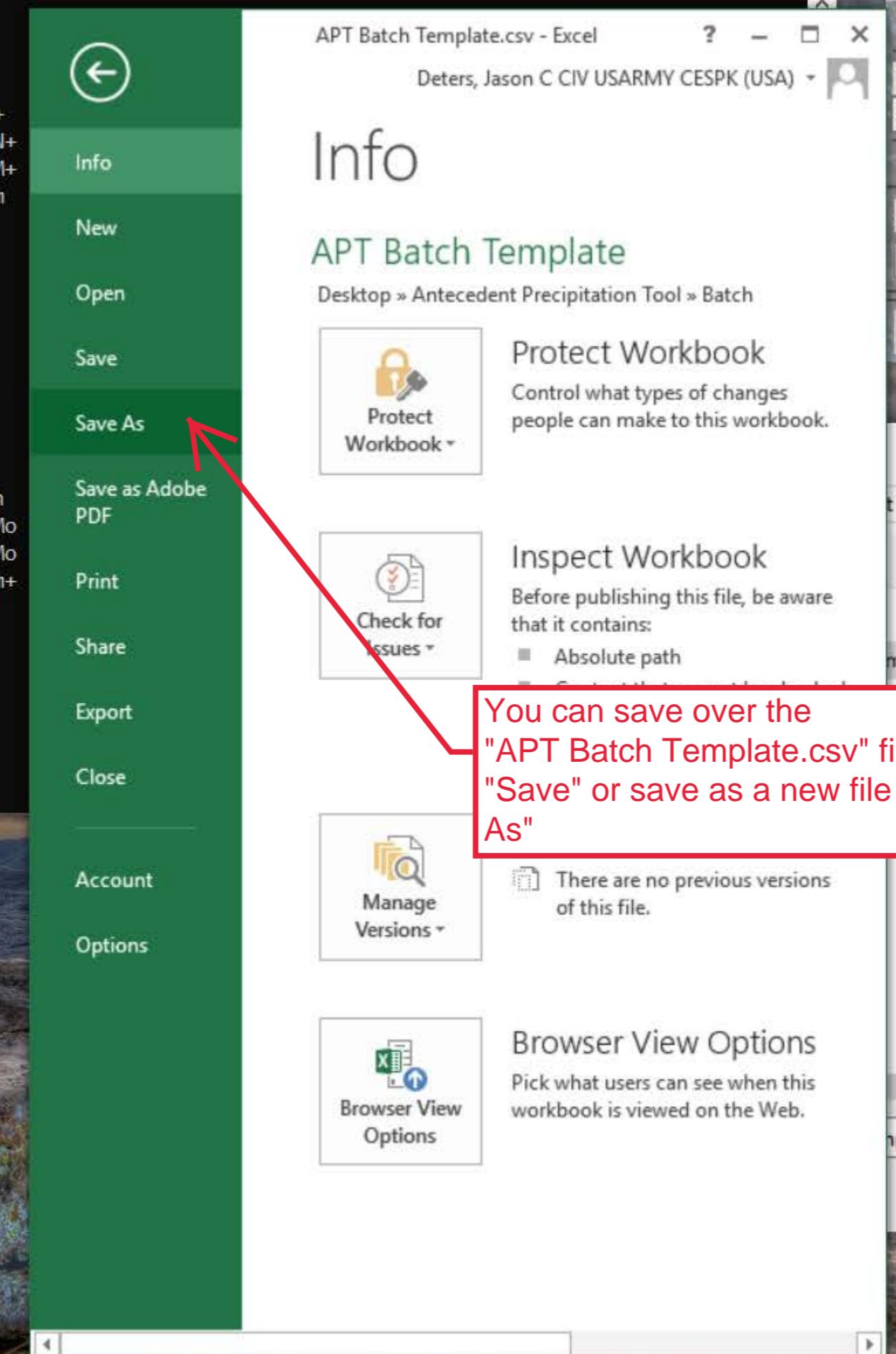


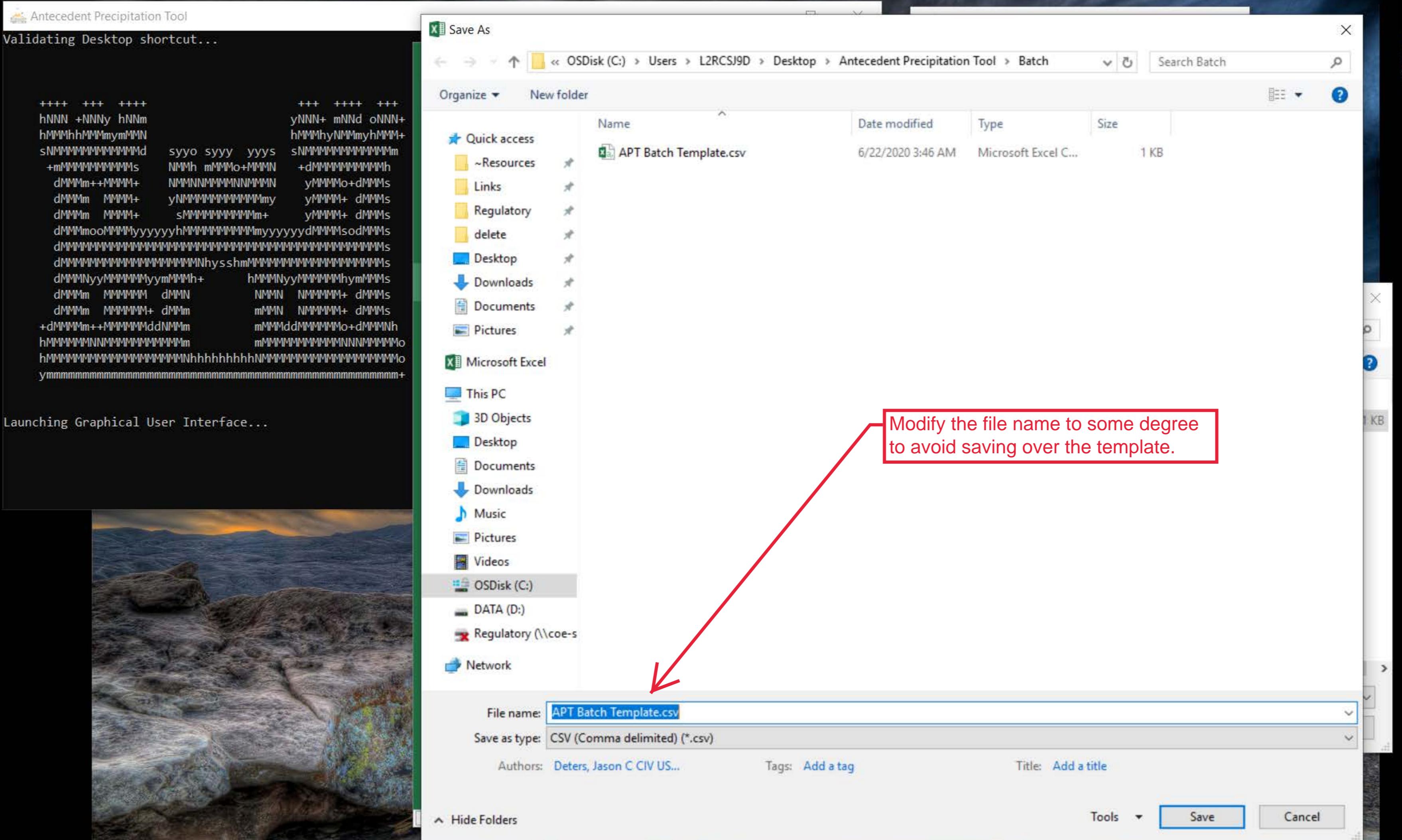
Antecedent  
Precipitati...

Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMMN  
sNMMMMMMMMMMMd  
+mMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyMMMMMyymMMh+  
dMMm MMMMM dMN  
dMMm MMMMM+ dMMm  
+dMMm++MMMMMdNMMm  
hMMMMMNMMMMMMMMm  
hMMMMMMMMMMMMMMNNh  
ymm+

Launching Graphical User Interface...

Antecedent  
Precipitati...



Modify the file name to some degree to avoid saving over the template.

Validating Desktop shortcut...

```
++++ +++ ++++
hNNN +NNNy hNNm
hMMhMMmymMN
sNMMMMMMMMMMMd
+mMMMMMMMMMs
dMMm+++MMMM+
dMMm MMM+ yNMMMMMMMMMy
dMMm MMM+ sMMMMMMMMM+
dMMmooMMMyyyyyyhhhhhhhyyyyydhMMMsodMMMs
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs
dMMMMMMMMMMMMMMMMMMMMNhysshMMMMMMMMMMMMMs
dMMNyMMMyymMMh+ hMMNyMMMyhmMMs
dMMm MMMMM dMMN NMMN NMMMM+ dMMMs
dMMm MMMMM+ dMMm mMMN NMMMM+ dMMMs
+dMMm+++MMMMMdNMMm mMMddMMMMMo+dMMNh
hMMMMMNMMMMMMMMMo mMMMMMMMMNNNMMMMMo
hMMMMMMMMMMMMNNhhhhhhhNMMMMMMMMMMMMMMMo
ymmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm+
```

Launching Graphical User Interface...



Save As

OSDisk (C:) > Users > L2RCSJ9D > Desktop > Antecedent Precipitation Tool > Batch

Organize New folder

Name	Date modified	Type	Size
APT Batch Template.csv	6/22/2020 3:46 AM	Microsoft Excel C...	1 KB
~Resources			
Links			
Regulatory			
delete			
Desktop			
Downloads			
Documents			
Pictures			
Microsoft Excel			
This PC			
3D Objects			
Desktop			
Documents			
Downloads			
Music			
Pictures			
Videos			
OSDisk (C:)			
DATA (D:)			
Regulatory (\\\coe-s			
Network			

File name: Example - APT Batch Template.csv

Save as type: CSV (Comma delimited) (\*.csv)

Authors: Deters, Jason C CIV US...

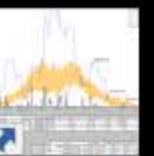
Tags: Add a tag

Title: Add a title

Tools ▾

Save Cancel

Click the "Save" button.

Antecedent  
Precipitati...



Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm+++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyMMMMMyymMMh+ hMMNyMMMMMyhmMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMMm  
+dMMm+++MMMMMdNMMm  
hMMMMMNMMMMMMMMNm  
hMMMMMMMMMMMMNNhhhhhhhNMMMMMMMMMMMMMMMo  
ymm+

Launching Graphical User Interface...

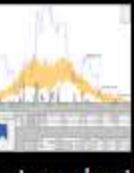
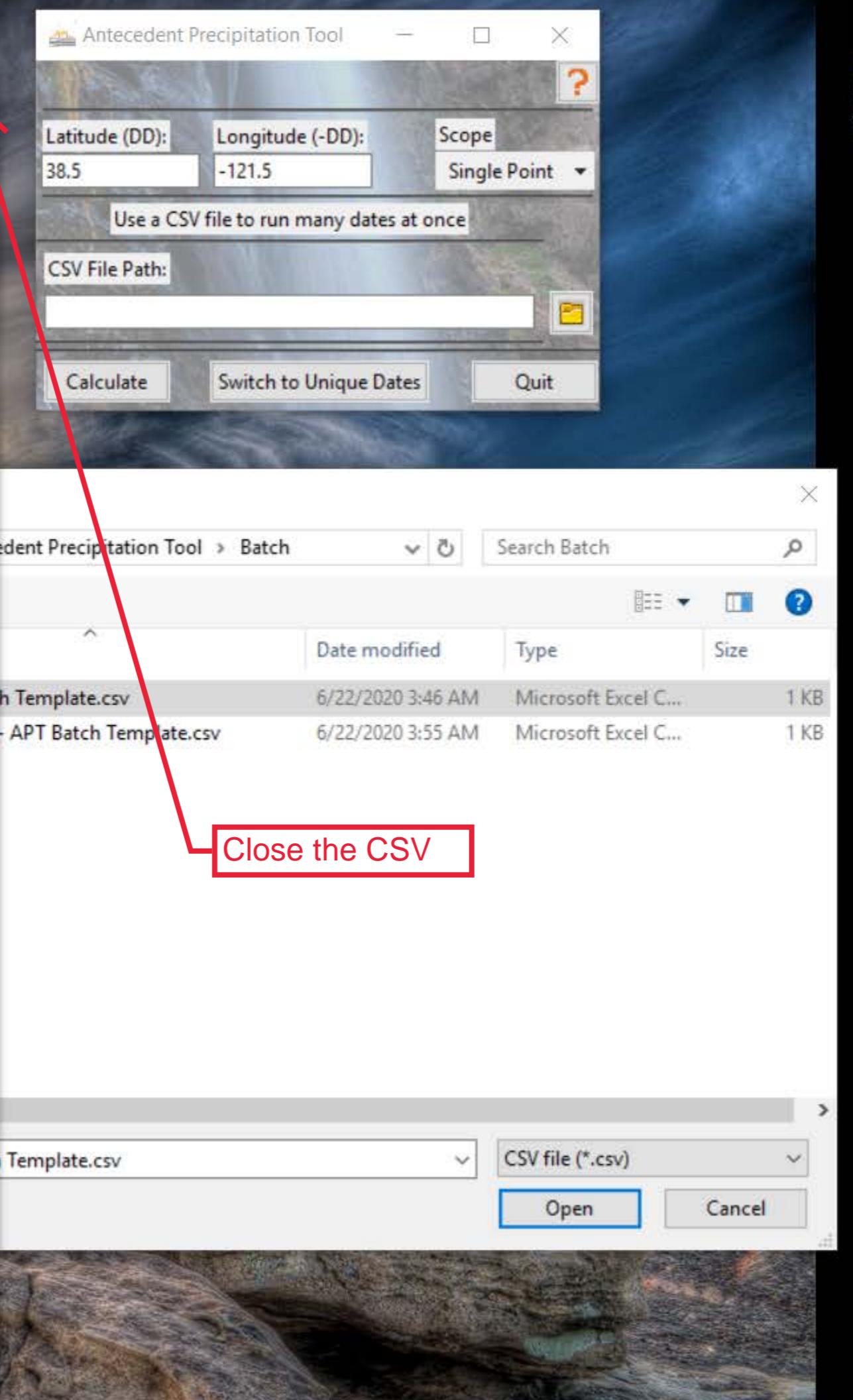


	A	B	C	D	E
2	1967	10	31		
3	1969	1	22		
4	1972	4	10		
5	1972	9	2		
6	1973	3	15		
7	1973	5	18		
8	1978	3	7		
9	1979	2	2		
10	1980	6	5		
11	1982	5	28		
12	1986	1	1		
13	1986	4	22		
14	1987	11	12		
15	1989	12	15		
16	1990	2	14		
17	1990	5	11		
18	1990	9	13		
19	1991	2	4		
20	1991	4	8		
21	1991	11	29		
22	1994	8	26		
23	1995	12	3		
24	1995	12	19		
25	1997	2	1		
26	1997	4	12		
27	1998	6	6		
28	1998	9	2		
29	2000	4	24		
30	2001	3	10		
31	2002	10	30		

Example - APT I

READY

100%



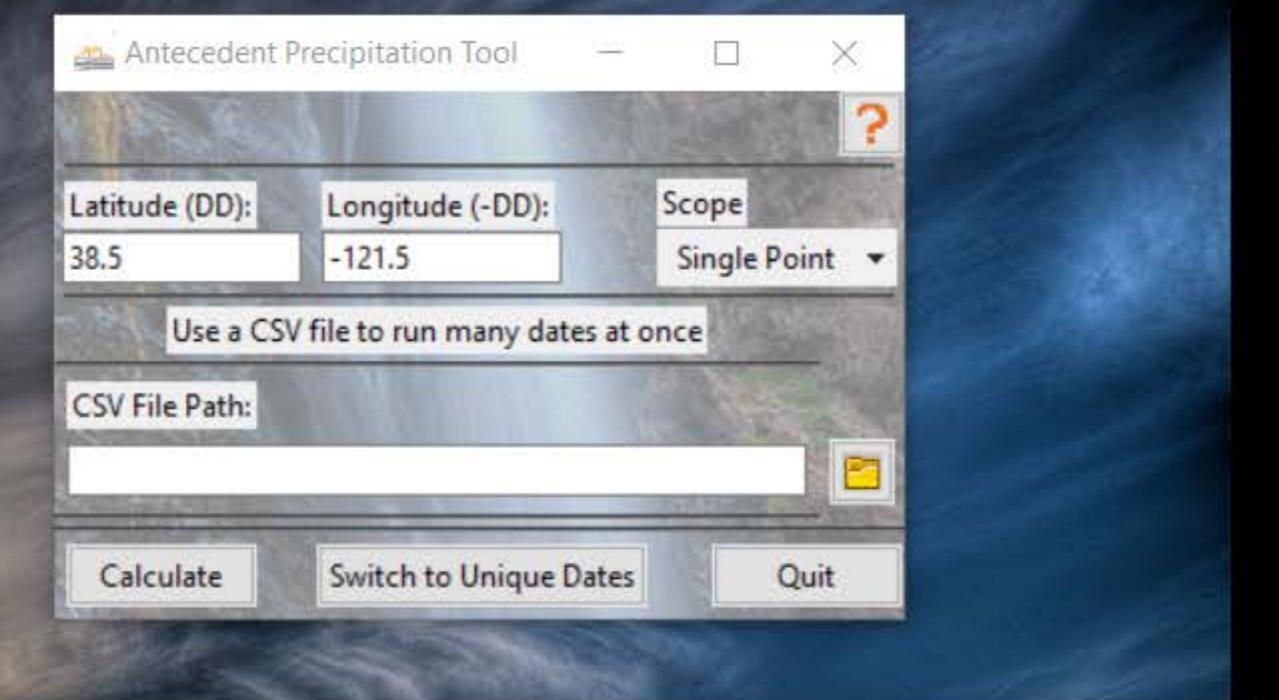
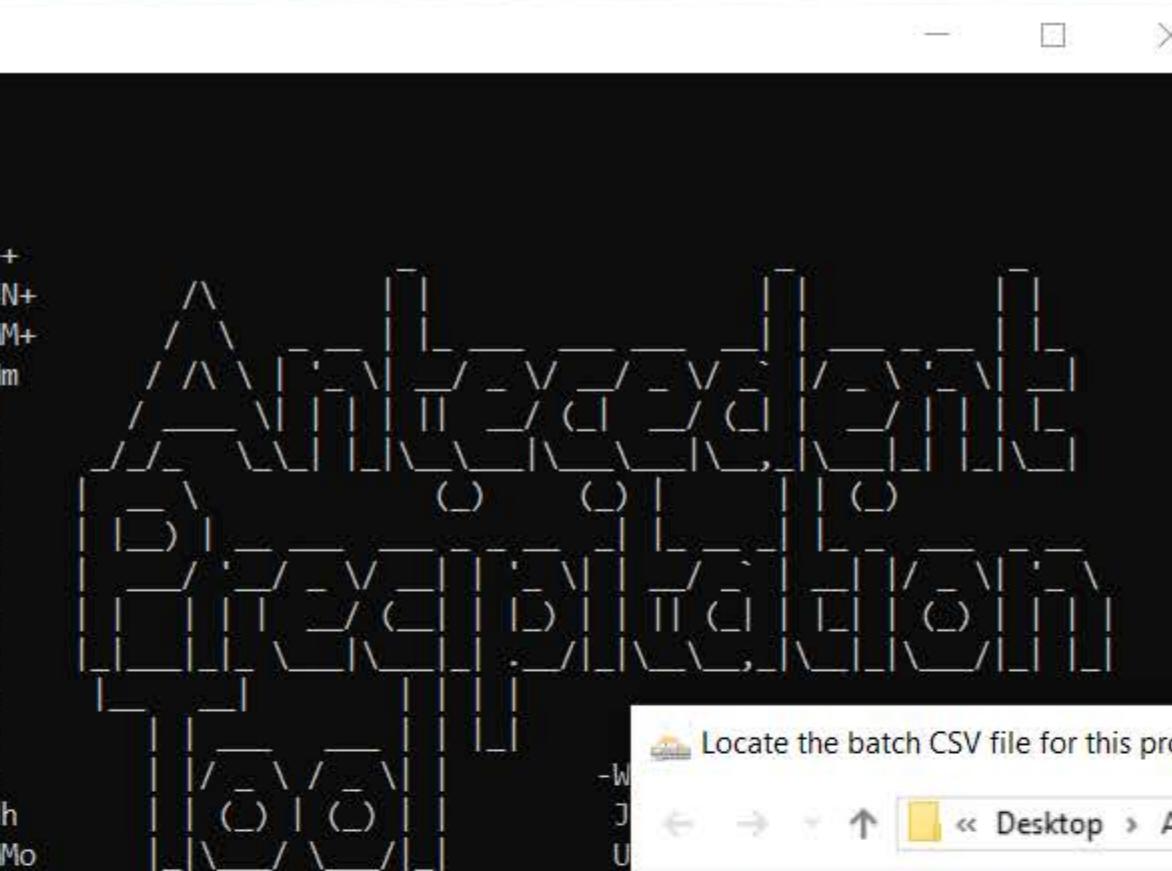
Antecedent  
Precipitati...



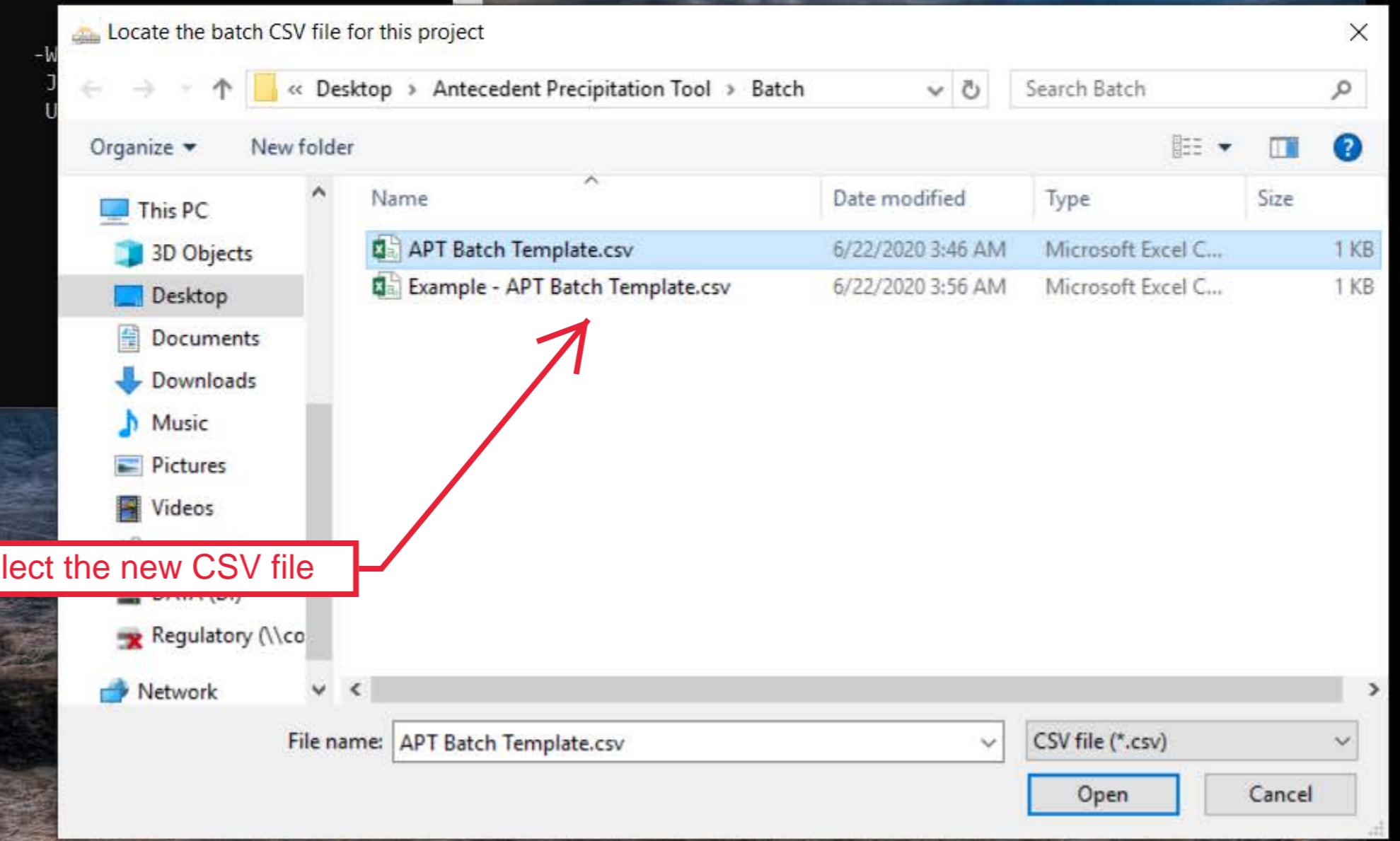
Validating Desktop shortcut...

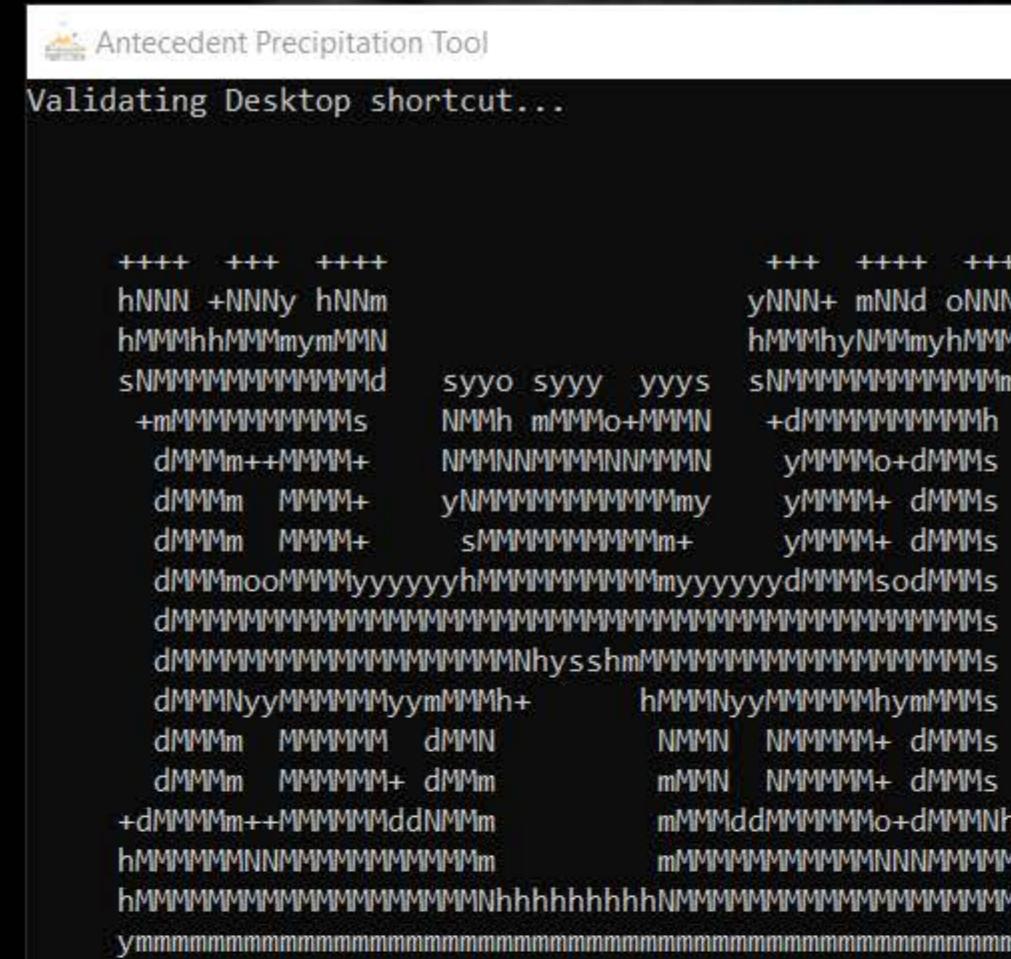
++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMNyyMMMMMyymMMh+ hMMNyyMMMMMyhmMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMm  
+dMMm++MMMMMdNMM  
hMMMMMNMMMMMMMM  
hMMMMMMMMMMMMMNhhhhhhhNMNNNNNNNNNNNNNN  
ymm

Launching Graphical User Interface...

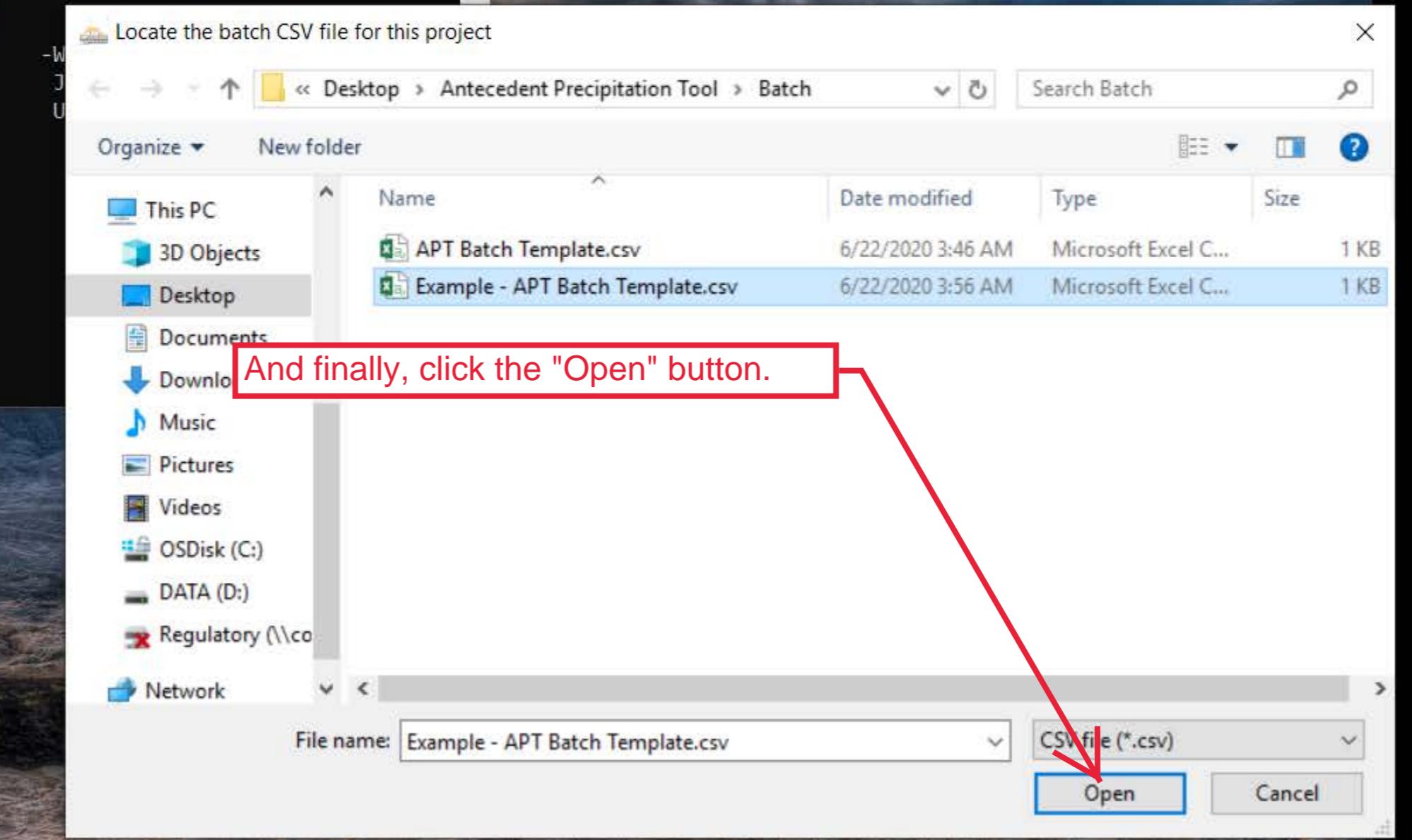
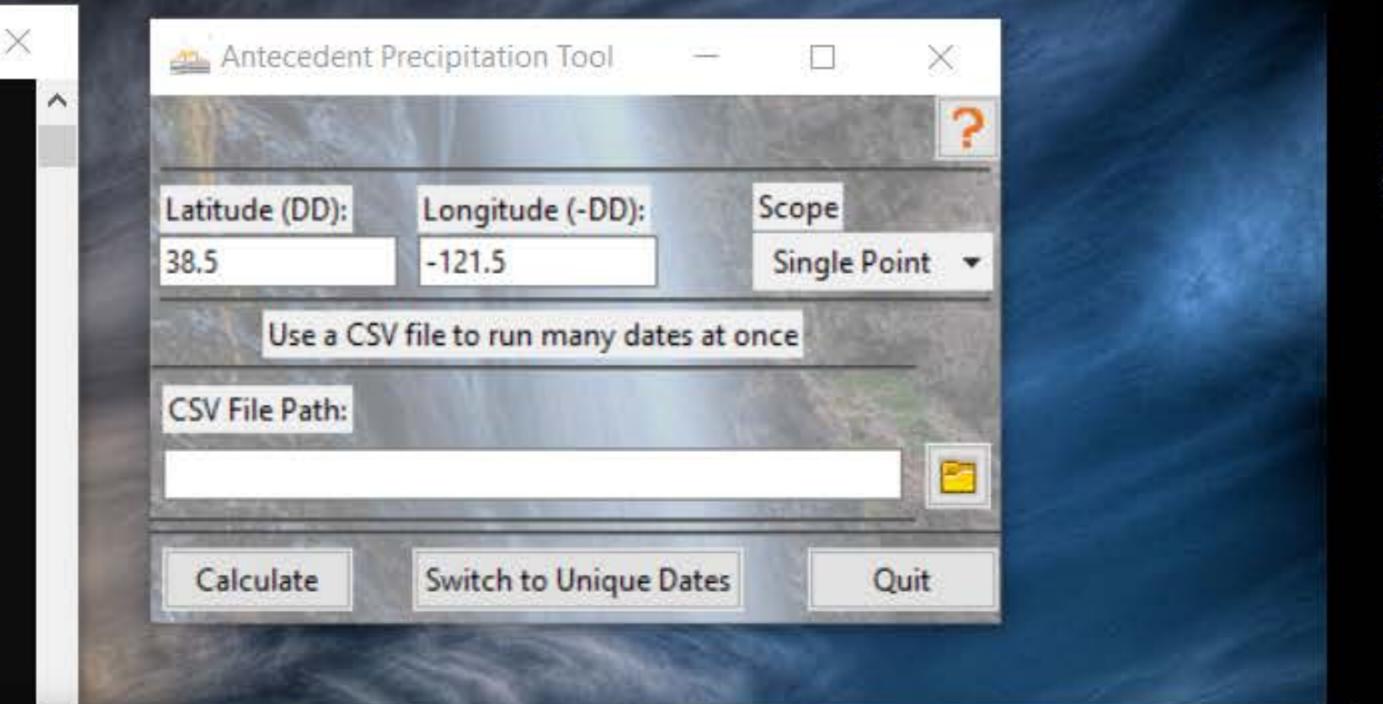
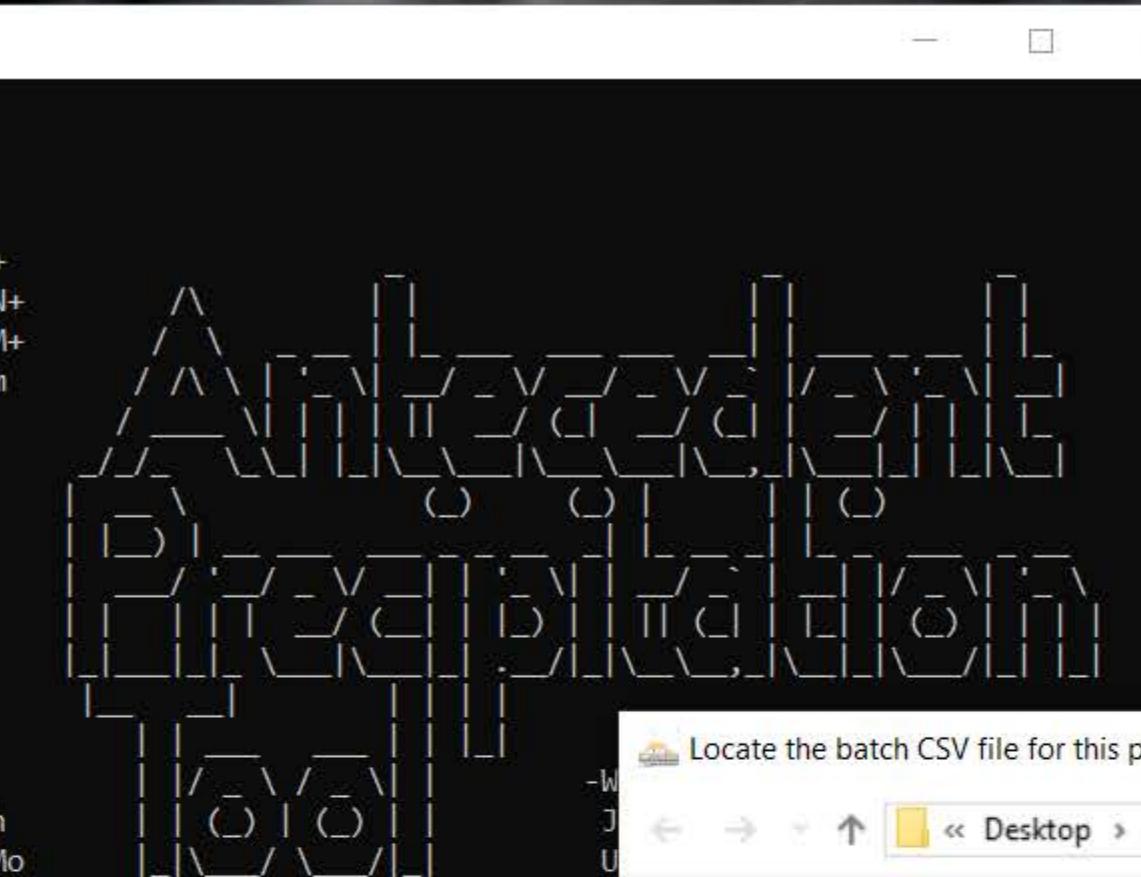


Antecedent  
Precipitati...





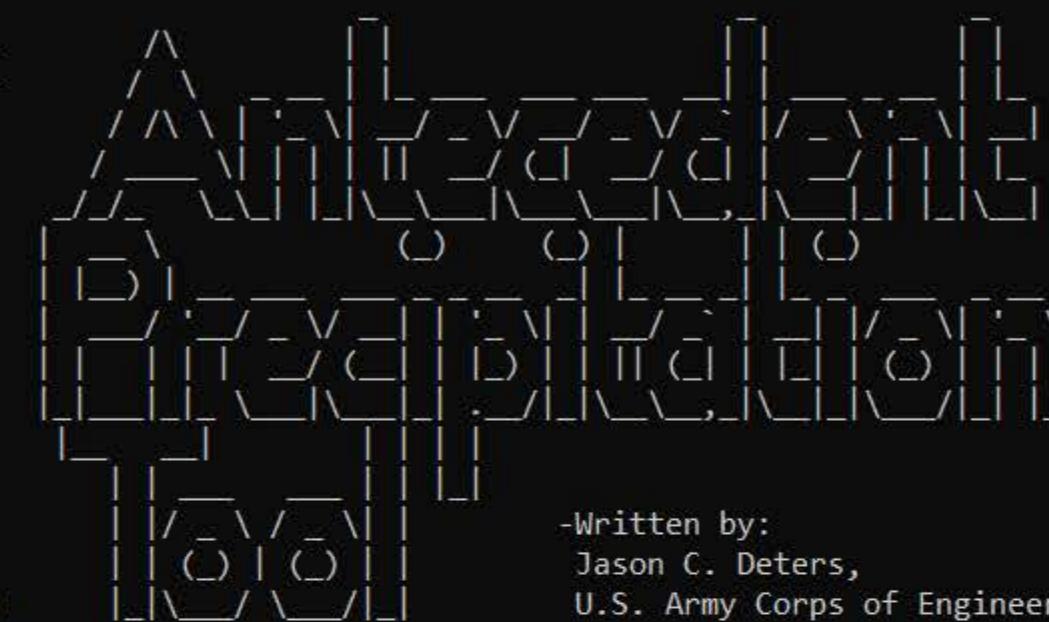
## Launching Graphical User Interface..





Validating Desktop shortcut...

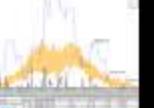
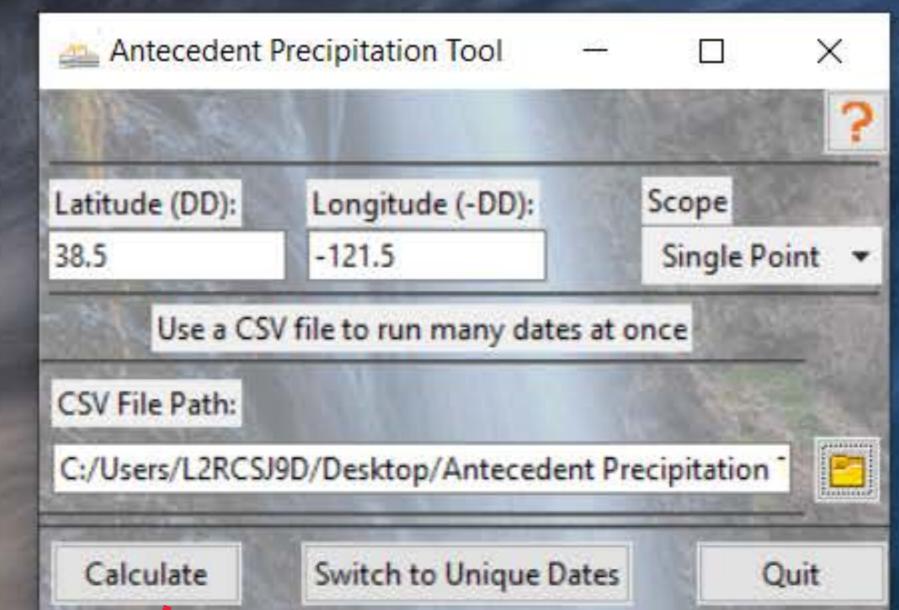
++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyyMMMMMyymMMh+ hMMNyyMMMMMyhmMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMM  
+dMMm++MMMMMdNMM  
hMMMMNNMMMMMMNm  
hMMMMNMhyyyyy hhhhNNMMMMMMMMMMMMMMMo  
ymm+



-Written by:  
Jason C. Deters,  
U.S. Army Corps of Engineers

Launching Graphical User Interface...

Now, when you click the "Calculate" button, the tool will analyze a day for each row of the CSV.



Antecedent  
Precipitati...

# Antecedent Precipitation Tool

May	-75	-64	11	Dry	Season
Jun	-129	-45	84	Dry	Season
Jul	-153	-14	139	Dry	Season
Aug	-139	-3	136	Dry	Season
Sep	-96	-1	96	Dry	Season
Oct	-42	0	43	Dry	Season
Nov	31	30	0	Wet	Season
Dec	58	58	0	Wet	Season

<---Selected Month

## GRAPH & TABLE GENERATION

Constructing graph, plotting data, and configuring tables...

Generating figure with graph and tables...

Saving C:\Users\L2RCSJ9D\Desktop\Antecedent Precipitation Tool\Outputs\v1\_0\_3\38.5, -121.5\2002-10-30.pdf

Closing figure...

Opening Batch Results CSV in new process...

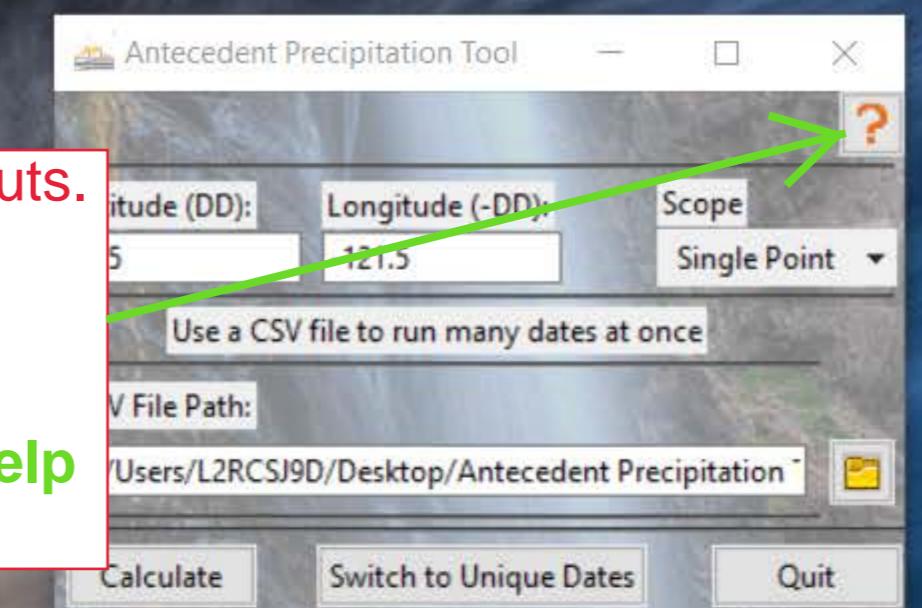
Opening finalPDF in new process...

Attempting to delete temporary files...

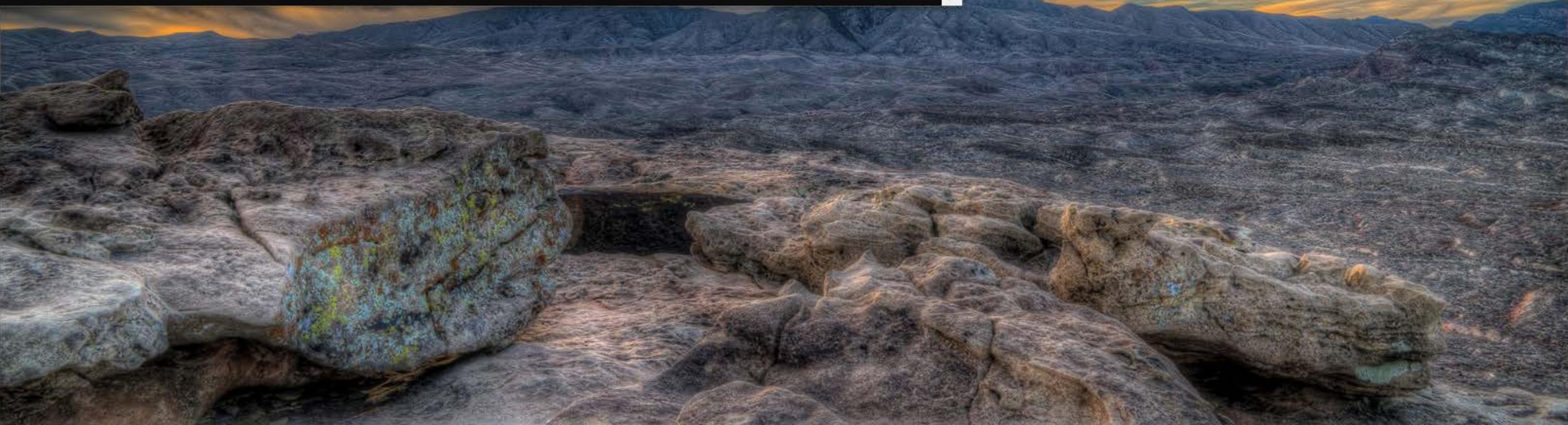
All tasks took 1 minutes and 7 seconds to complete

Ready for new input.

This walkthrough skips right to the outputs.  
For more information on what happens  
between the "Calculate" button and the  
outputs, see "How to generate a single-  
point analysis for a given date" in the **Help  
Menu**.



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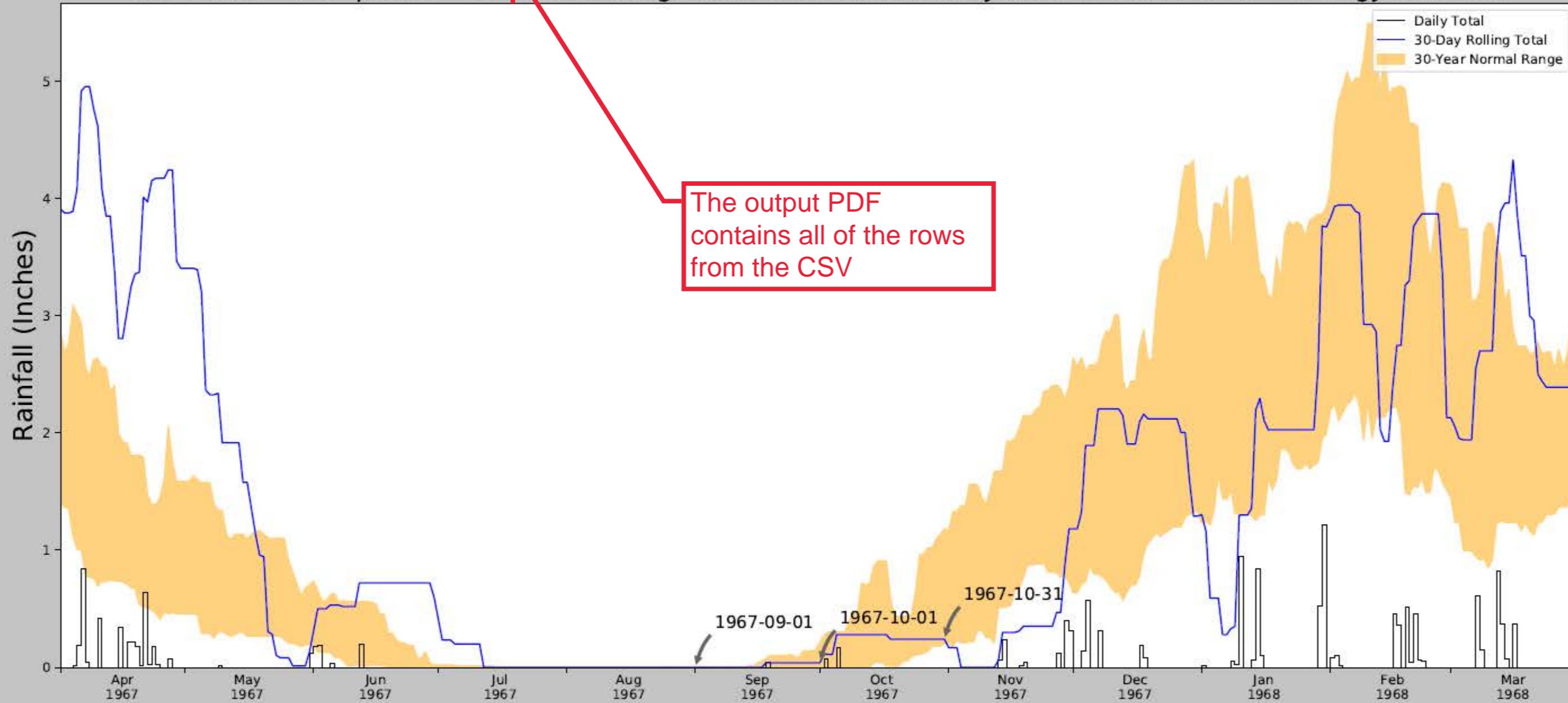
1 / 30



61.2%



### Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	38.5, -121.5
Observation Date	1967-10-31
Elevation (ft)	7.14
Drought Index (PDSI)	Incipient drought
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
1967-10-31	0.203543	1.182677	0.240157	Normal	2	3	6
1967-10-01	0.0	0.216535	0.03937	Normal	2	2	4
1967-09-01	0.0	0.0	0.0	Normal	2	1	2
Result							Normal Conditions - 12

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May	-75	-64	11	Dry
Jun	-129	-45	84	Dry
Jul	-153	-14	139	Dry
Aug	-139	-3	136	Dry
Sep	-96	-1	96	Dry
Oct	-42	0	43	Dry
Nov	31	30	0	Wet
Dec	58	58	0	

Outputs for the CSV dates are presented in tabular format as well.

1	Latitude	Longitude	Date	Image Name	Image Source	PDSI Value	PDSI Class	Season	ARC Score	Antecedent Precip Condition
2	38.5	-121.5	10/31/1967	None	None	-0.69	Incipient drought	Dry Season	12	Normal Conditions
3	38.5	-121.5	1/22/1969	None	None	2.61	Moderate wetness	Wet Season	16	Wetter than Normal
4	38.5	-121.5	4/10/1972	None	None	-1.65	Mild drought	Dry Season	9	Drier than Normal
5	38.5	-121.5	9/2/1972	None	None	0.67	Incipient wetness	Dry Season	13	Normal Conditions
6	38.5	-121.5	3/15/1973	None	None	-0.16	Normal	Wet Season	18	Wetter than Normal
7	38.5	-121.5	5/18/1973	None	None	-1.3	Mild drought	Dry Season	10	Normal Conditions
8	38.5	-121.5	3/7/1978	None	None	2.16	Moderate wetness	Wet Season	18	Wetter than Normal
9	38.5	-121.5	2/2/1979	None	None	0.67	Incipient wetness	Wet Season	13	Normal Conditions
10	38.5	-121.5	6/5/1980	None	None	1.23	Mild wetness	Dry Season	13	Normal Conditions
11	38.5	-121.5	5/28/1982	None	None	2.64	Moderate wetness	Dry Season	12	Normal Conditions
12	38.5	-121.5	1/1/1986	None	None	0.42	Normal	Wet Season	14	Normal Conditions
13	38.5	-121.5	4/22/1986	None	None	2.1	Moderate wetness	Dry Season	15	Wetter than Normal
14	38.5	-121.5	11/12/1987	None	None	-3.44	Severe drought	Wet Season	10	Normal Conditions
15	38.5	-121.5	12/15/1989	None	None	-1.75	Mild drought	Wet Season	13	Normal Conditions
16	38.5	-121.5	2/14/1990	None	None	-1.89	Mild drought	Wet Season	11	Normal Conditions
17	38.5	-121.5	5/11/1990	None	None	1.47	Mild wetness	Dry Season	10	Normal Conditions
18	38.5	-121.5	9/13/1990	None	None	-0.12	Normal	Dry Season	12	Normal Conditions
19	38.5	-121.5	2/4/1991	None	None	-3.02	Severe drought	Wet Season	11	Normal Conditions
20	38.5	-121.5	4/8/1991	None	None	1.83	Mild wetness	Dry Season	15	Wetter than Normal
21	38.5	-121.5	11/29/1991	None	None	-1.1	Mild drought	Wet Season	9	Drier than Normal
22	38.5	-121.5	8/26/1994	None	None	-1.58	Mild drought	Dry Season	12	Normal Conditions
23	38.5	-121.5	12/3/1995	None	None	3.38	Severe wetness	Wet Season	7	Drier than Normal
24	38.5	-121.5	12/19/1995	None	None	3.38	Severe wetness	Wet Season	12	Normal Conditions
25	38.5	-121.5	2/1/1997	None	None	3.65	Severe wetness	Wet Season	17	Wetter than Normal
26	38.5	-121.5	4/12/1997	None	None	1.84	Mild wetness	Dry Season	8	Drier than Normal
27	38.5	-121.5	6/6/1998	None	None	5.95	Extreme wetness	Dry Season	17	Wetter than Normal
28	38.5	-121.5	9/2/1998	None	None	5.7	Extreme wetness	Dry Season	13	Normal Conditions
29	38.5	-121.5	4/24/2000	None	None	-0.48	Normal	Dry Season	15	Wetter than Normal
30	38.5	-121.5	3/10/2001	None	None	-1.83	Mild drought	Wet Season	14	Normal Conditions
31	38.5	-121.5	10/20/2002	None	None	2.20	Severe drought	Dry Season	9	Drier than Normal



# Antecedent Precipitation Tool

May	-75	-64	11	Dry Season
Jun	-129	-45	84	Dry Season
Jul	-153	-14	139	Dry Season
Aug	-139	-3	136	Dry Season
Sep	-96	-1	96	Dry Season
Oct	-42	0	43	Dry Season
Nov	31	30	0	Wet Season
Dec	58	58	0	

<---Selected Month

38.5, -121.5

File Home Share View

← → ↑ << Desktop >> Antecedent Precipitation Tool > Outputs > v1\_0\_3 > 38.5, -121.5

# Antecedent Precipitation Tool

Latitude (DD): 38.5 Longitude (-DD): -121.5 Scope Single Point

Use a CSV file to run many dates at once

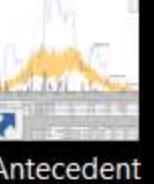
Station Data (38.5, -121.5) Batch Result.csv

- (38.5, -121.5) Batch Result.pdf
- 1969-01-22.pdf
- 1972-09-02.pdf
- 1973-05-18.pdf
- 1979-02-02.pdf
- 1982-05-28.pdf
- 1986-04-22.pdf
- 1989-12-15.pdf
- 1990-05-11.pdf
- 1991-02-04.pdf
- 1991-11-29.pdf
- 1995-12-03.pdf
- 1997-02-01.pdf
- 1998-06-06.pdf
- 2000-04-24.pdf
- 2002-10-30.pdf
- 1967-10-31.pdf
- 1972-04-10.pdf
- 1973-03-15.pdf
- 1978-03-07.pdf
- 1980-06-05.pdf
- 1986-01-01.pdf
- 1987-11-12.pdf
- 1990-02-14.pdf
- 1990-09-13.pdf
- 1991-04-08.pdf
- 1994-08-26.pdf
- 1995-12-19.pdf
- 1997-04-12.pdf
- 1998-09-02.pdf
- 2001-03-10.pdf

Dates Quit

Finally, the output folder is opened so the user knows where their data were saved.

```
#--  
Constructing graph, plotting  
Generating figure with graph  
  
Saving C:\Users\L2RCSJ9D\Desktop  
Closing figure...  
  
Opening Batch Results CSV in  
Opening finalPDF in new process  
Attempting to delete temporary files  
All tasks took 1 minutes and 0 seconds  
  
Ready for new input.
```



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