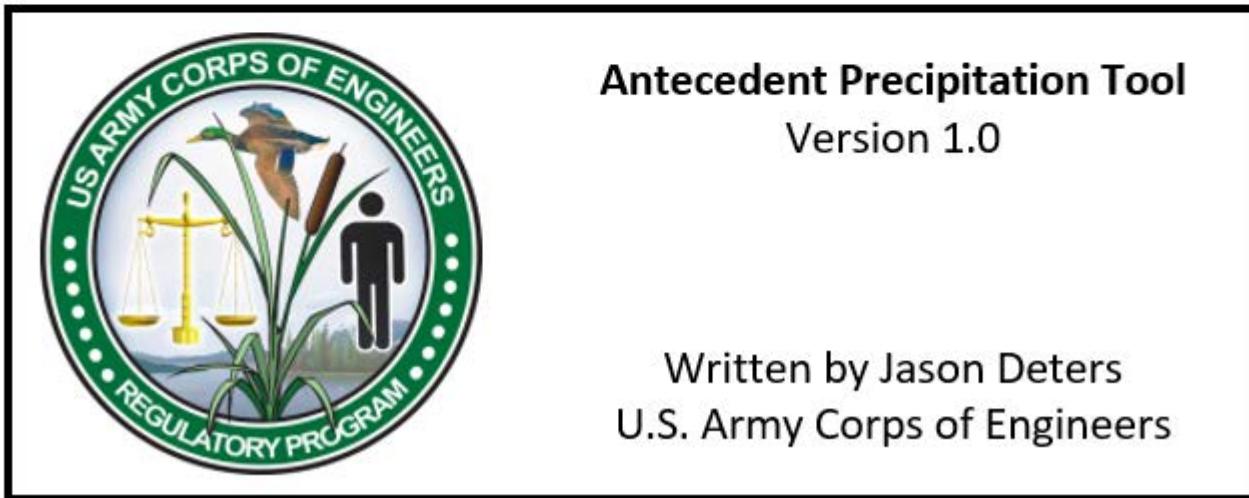
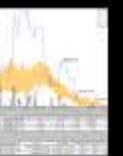


# How to Generate a Single-point Analysis for Many Dates at Once Using CSV Input





Antecedent  
Precipitation  
Tool



Launch  
the APT





Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyyhhMMMMMMMyyyyyydMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMhysshmMMMMMMMMMMMMMMMs  
dMMNyMMMyymMMh+  
dMMm MMM dMN  
dMMm MMM+ dMM  
+dMMm++MMMdNMM  
hMMMMNNMMMMNM  
hMMMMNMhyyyyyhhhhhNMMMMNM  
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)

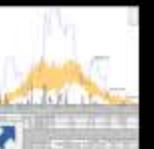
**NOTE:** Longitudes in the U.S. are negative, so your entry should start with a minus "-" symbol.

Latitude (DD):  Run a single date or click "+" to add more

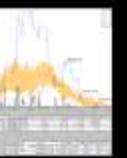
Longitude (-DD):  Scope: Single Point

#  YYYY-MM-DD

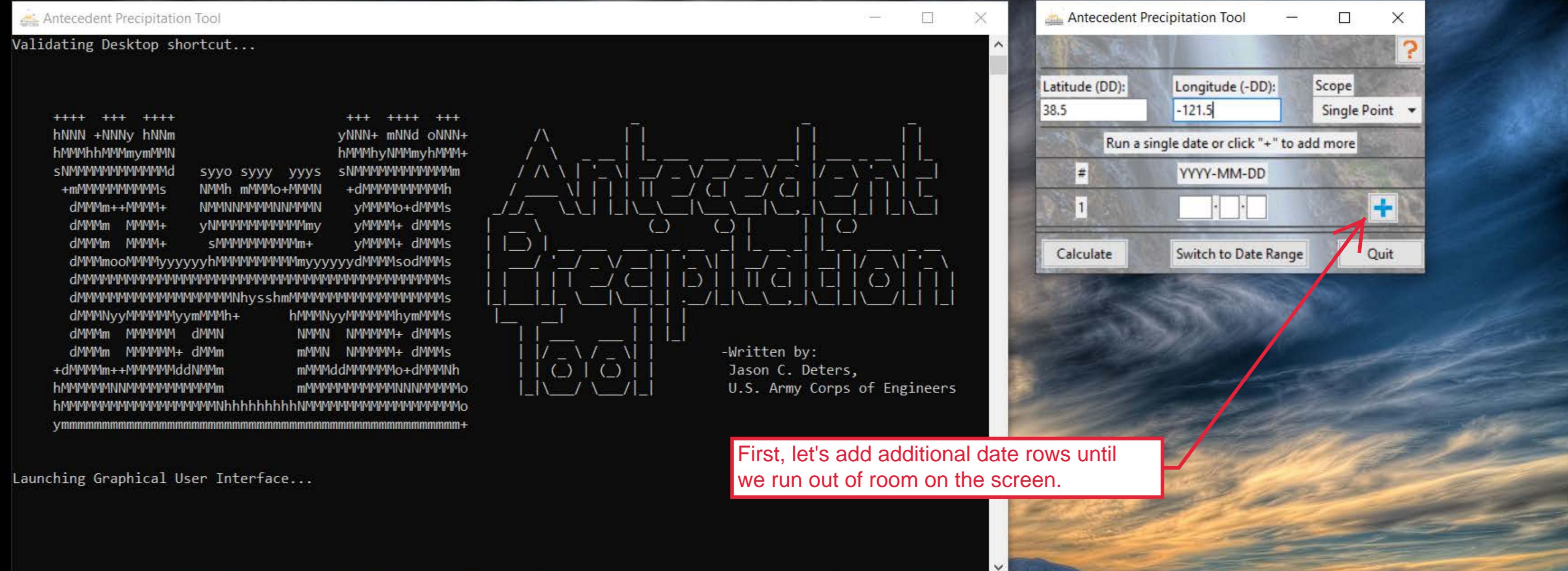
Calculate  Switch to Date Range  Quit



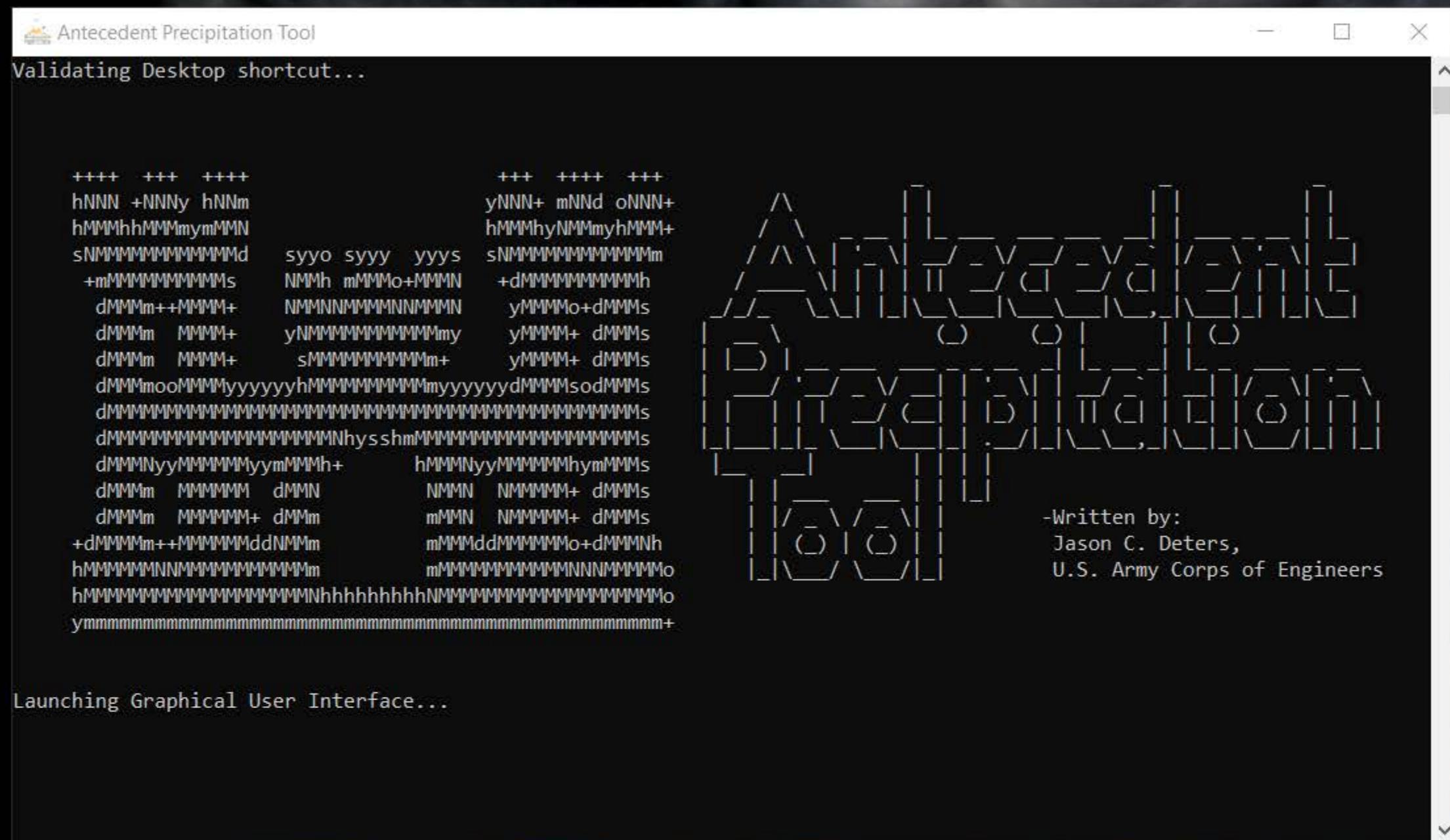
Antecedent Precipitati...



## Antecedent Precipitati...



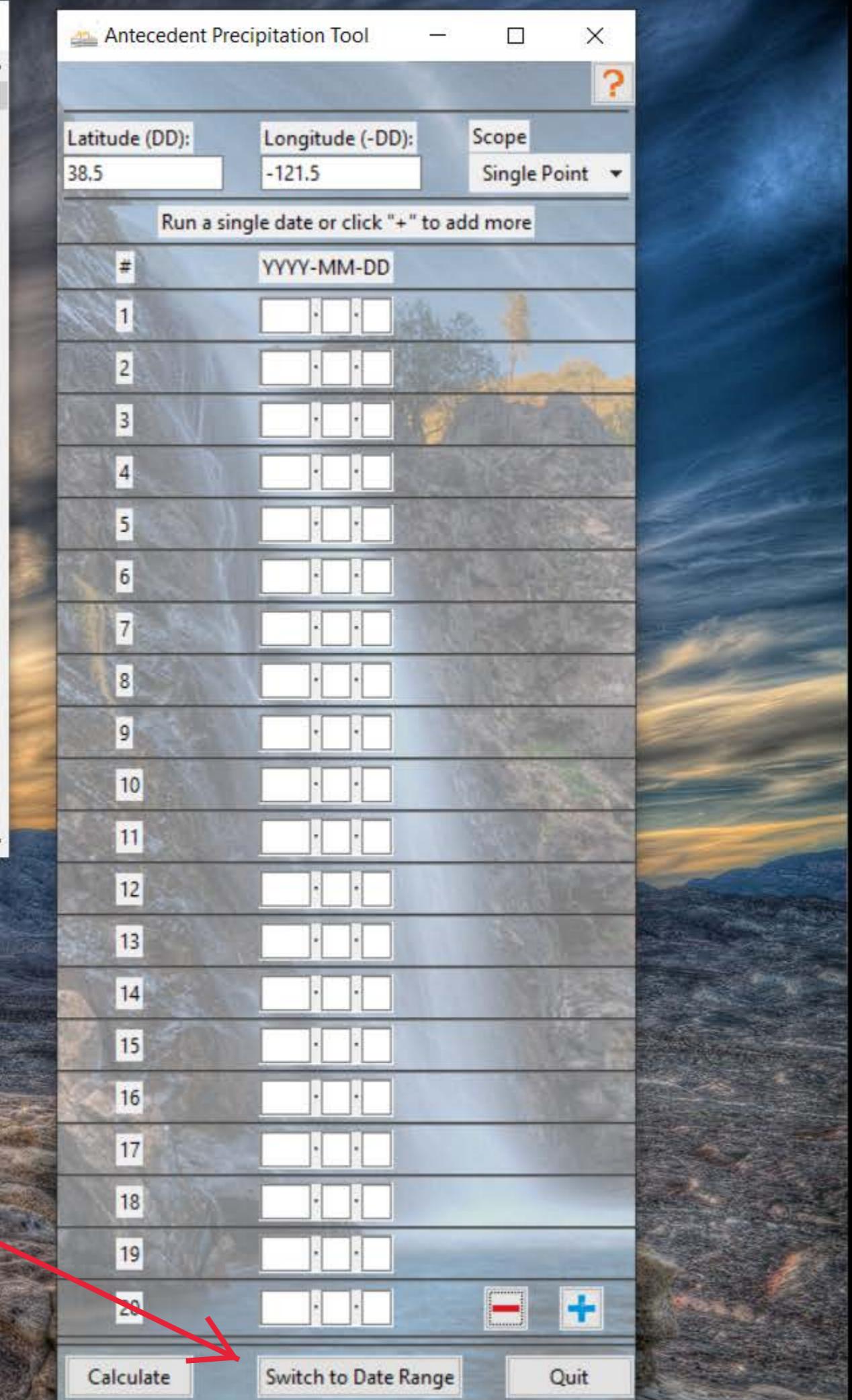
First, let's add additional date rows until we run out of room on the screen.

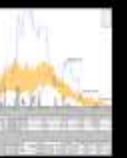


On a standard 1080P Monitor, the maximum number of date rows seems to be 20-21.

If you want to analyze more dates than this at once, you will need to switch to "CSV Input."

To get to CSV Input, you first have to cycle through the "Date Range" mode.





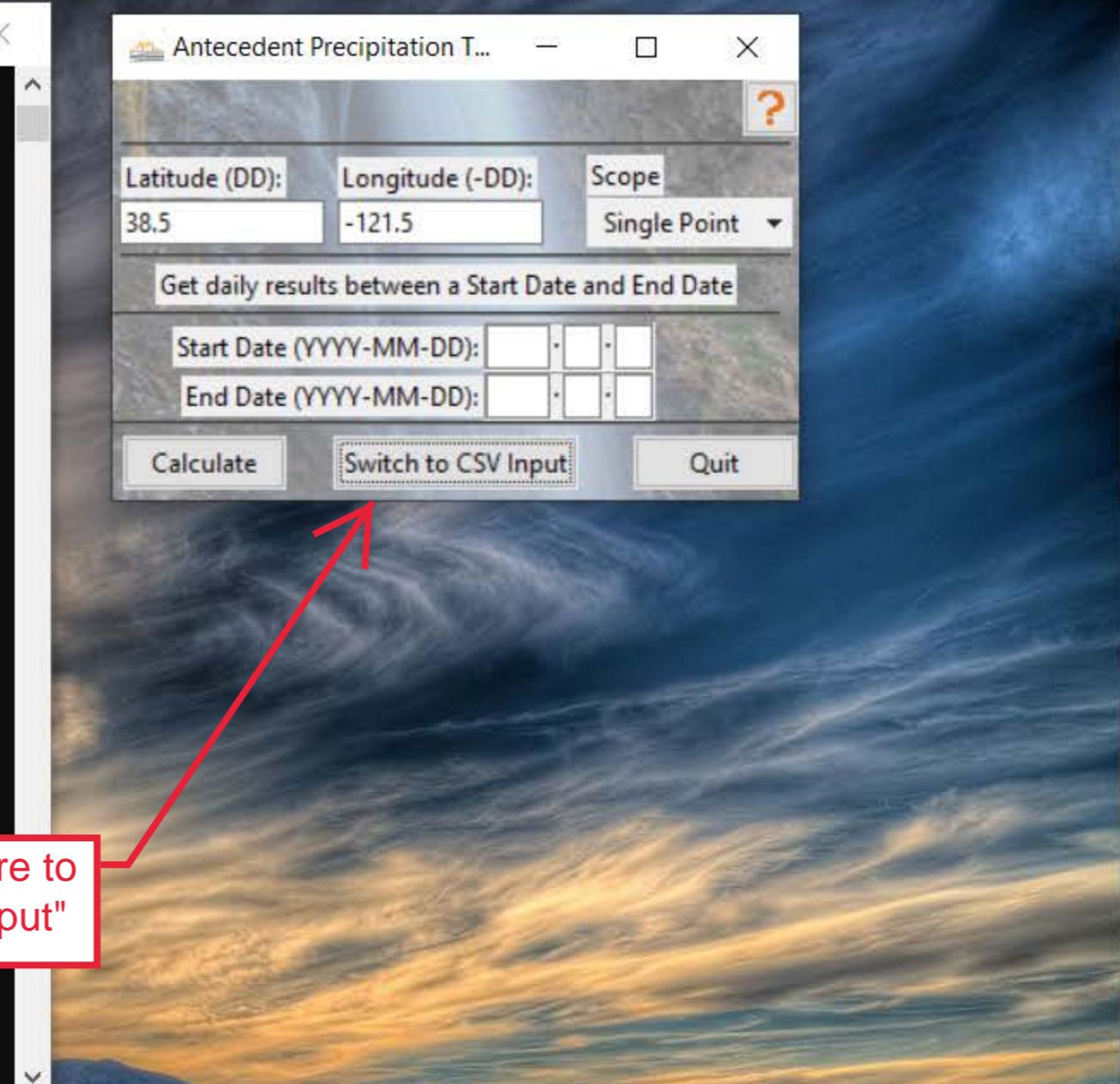
## Antecedent Precipitati...



Validating Desktop shortcut...



Launching Graphical User Interface...



Antecedent Precipitation Index

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

38.5 -121.5 Single P

Get daily results between a Start Date and End Date

Start Date (YYYY-MM-DD):

End Date (YYYY-MM-DD):

[Calculate](#)

**www.oriental.com**

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

Click once more to  
get to "CSV Input"



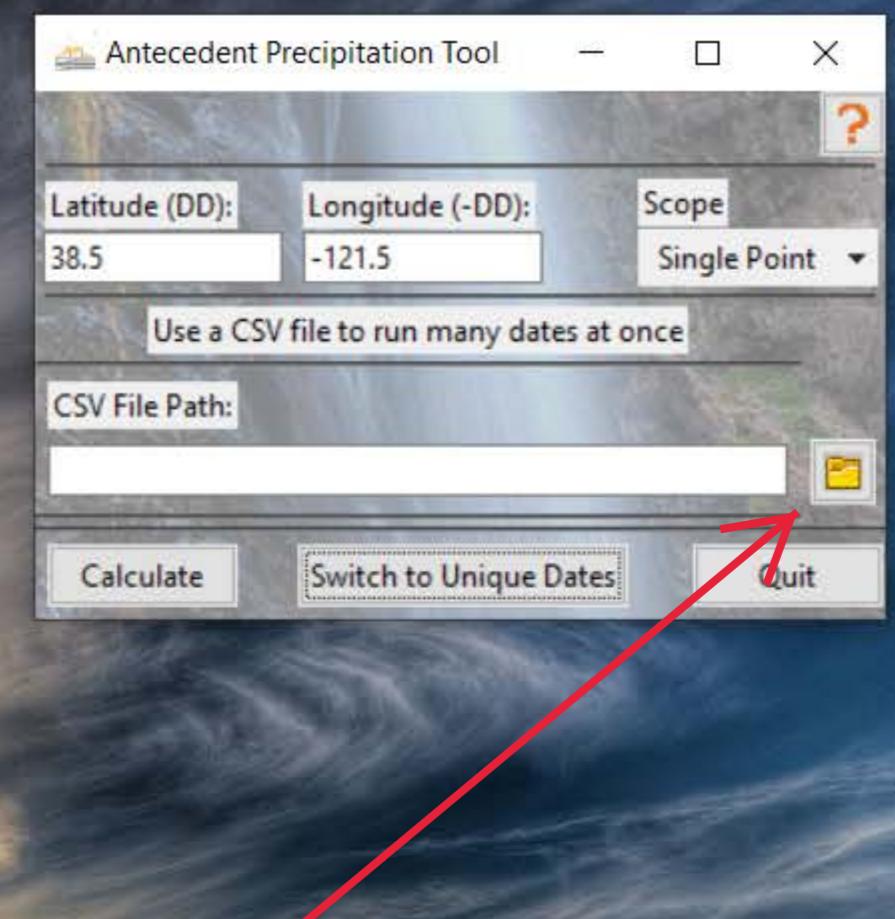
Validating Desktop shortcut...

++++ +++ +++++  
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

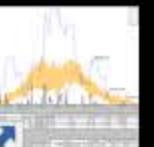


-Written by:  
Jason C. Deters,  
U.S. Army Corps of Engineers

Launching Graphical User Interface...



You can copy the path of an existing CSV in  
the entry box, or you can select one using the  
button with the folder icon.



Antecedent  
Precipitati...



Validating Desktop shortcut...

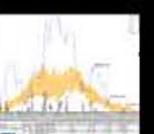
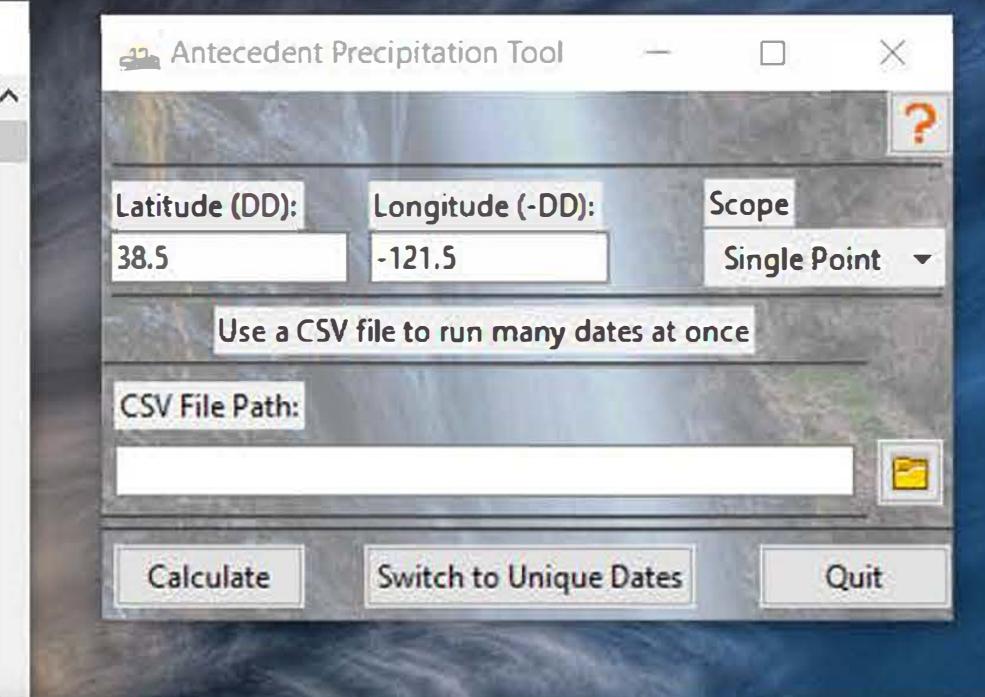
```
++++ +++ +++
hNNN +NNNy hNNm
hMMNhMMmymMMN
sNMMMMMMMMMMMd
+mMMMMMMMMMs
dMMm++MMMM+
dMMm MMM+
dMMm MMM+
dMMmooMMMyyyyyyhhMMMMMyyyyyydMMMsodMMMs
dMMMMMMMMMMMMMM
dMMMMMMMMMMMMMM
dMMNyMMMyymMM
dMMm MMM dMM
dMMm MMM+ dMM
+dMMm++MMMMddNMm
hMMMMNNMMMMMM
hMMMMMMMMMMMMMM
ymmmmmmmmmmmmmm
```

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

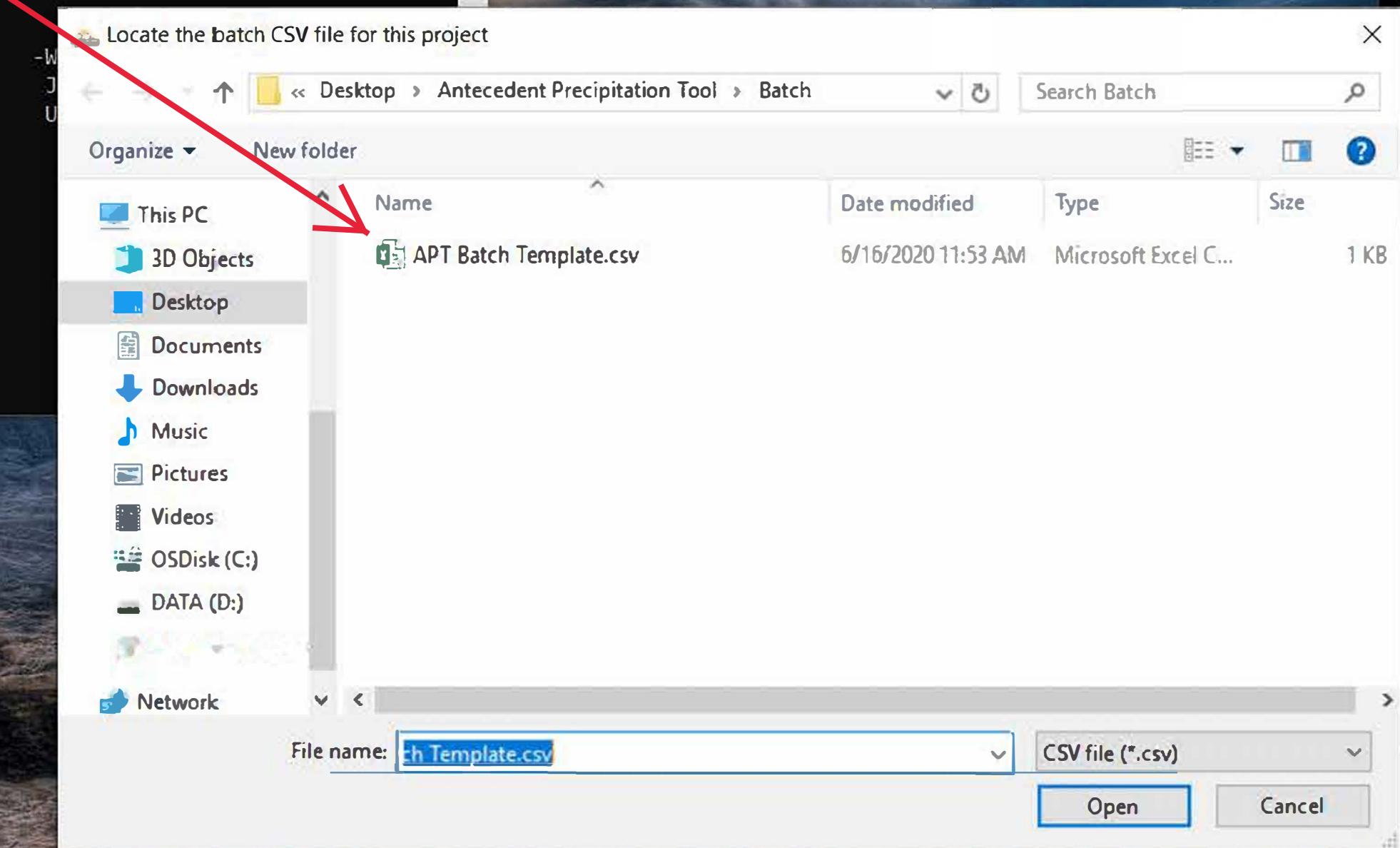
You can quickly edit this file and save it to serve as your Input CSV.

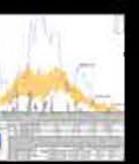
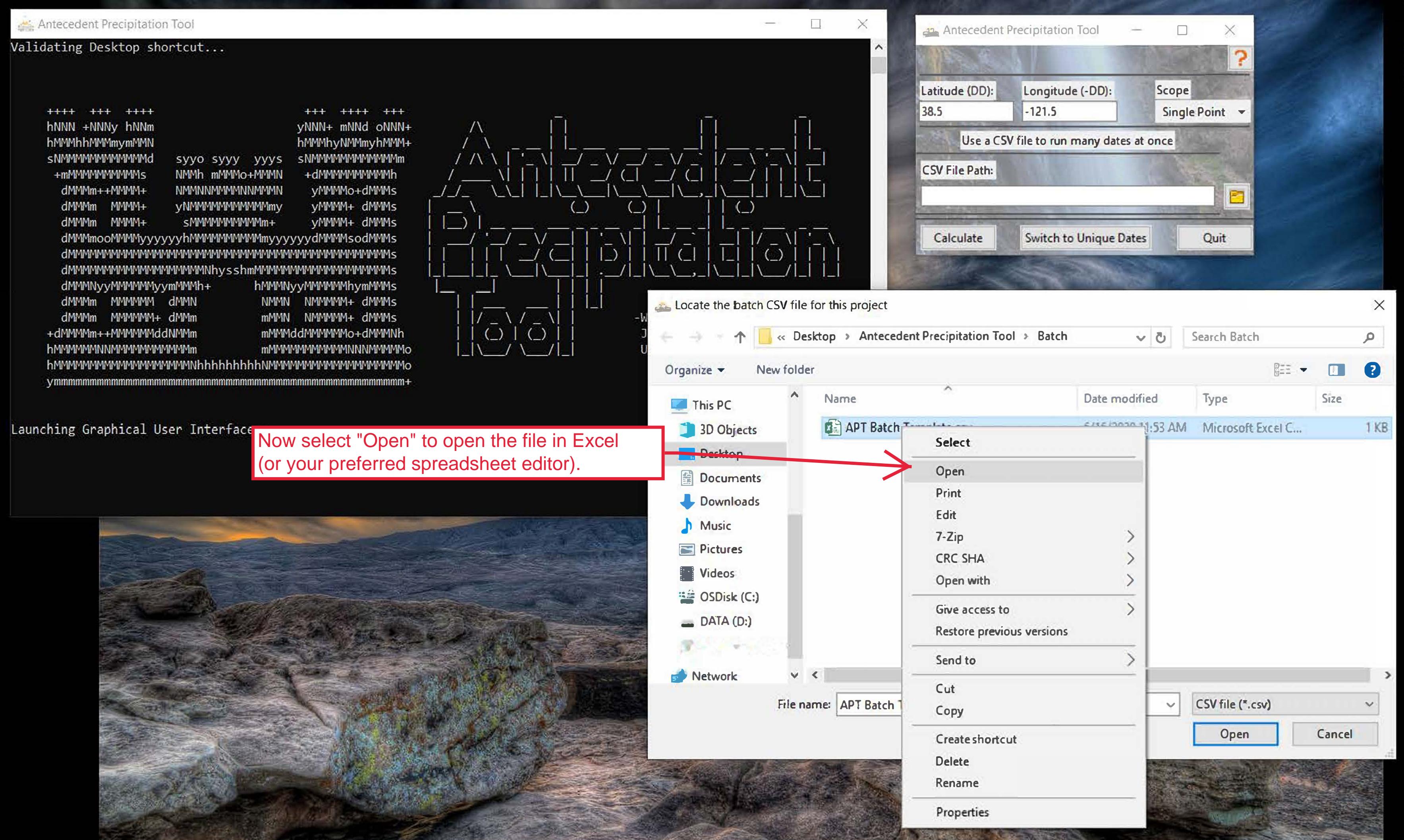
Start by right-clicking on the file.

Launching Graphical User Interface...

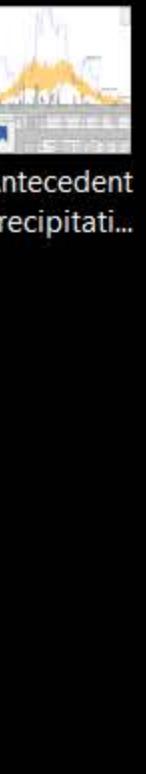
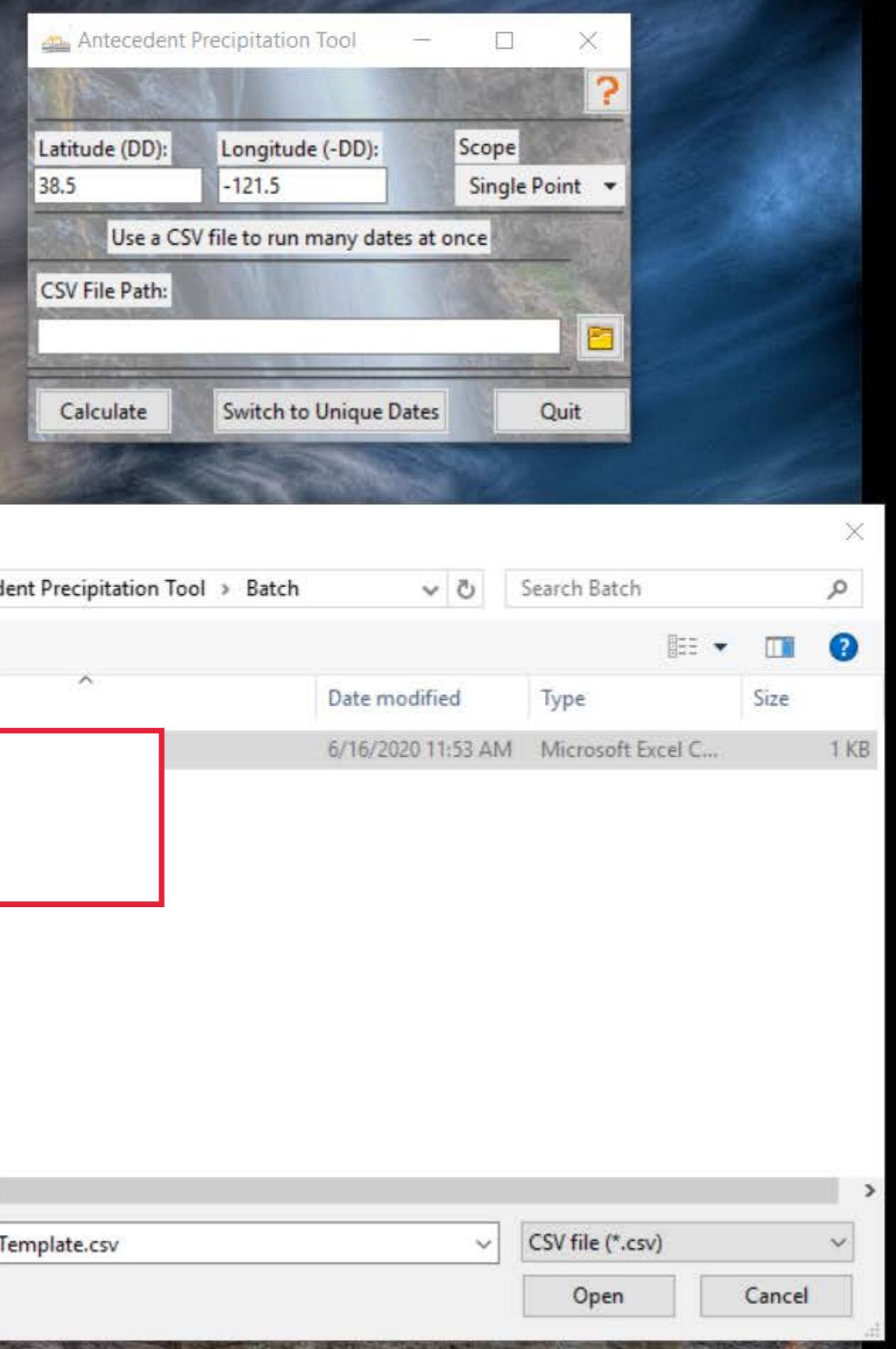
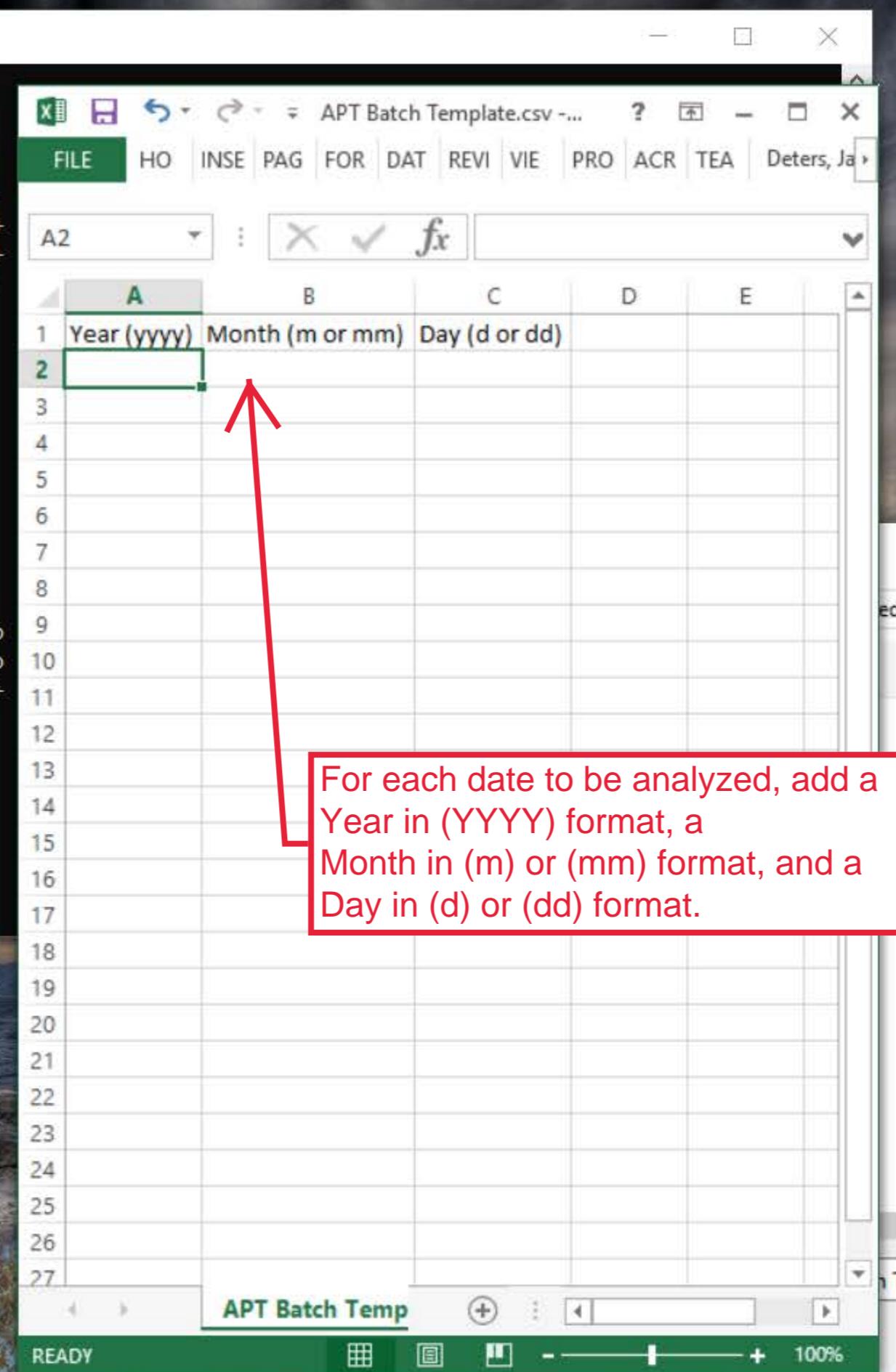
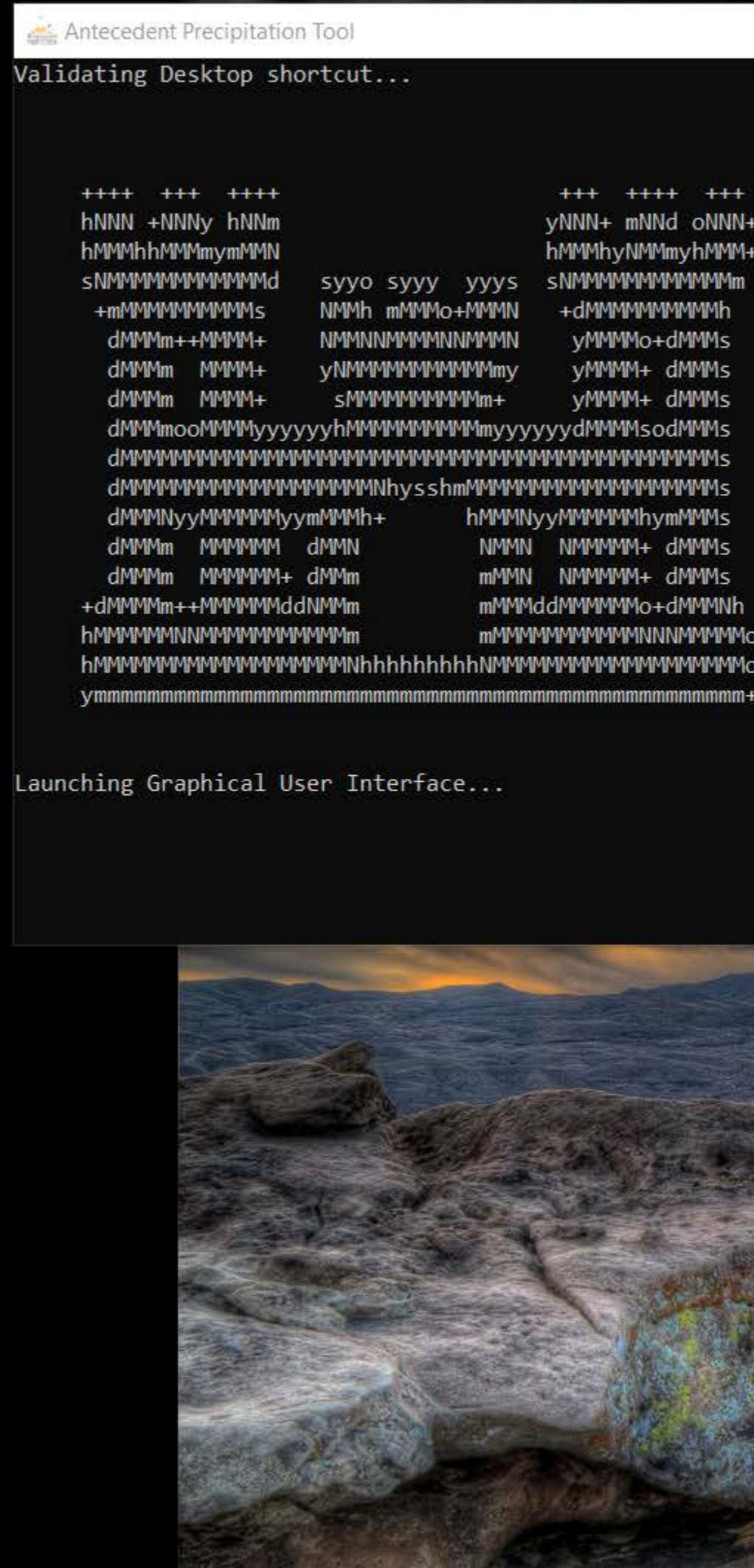


Antecedent  
Precipitati...





## Antecedent Precipitati...

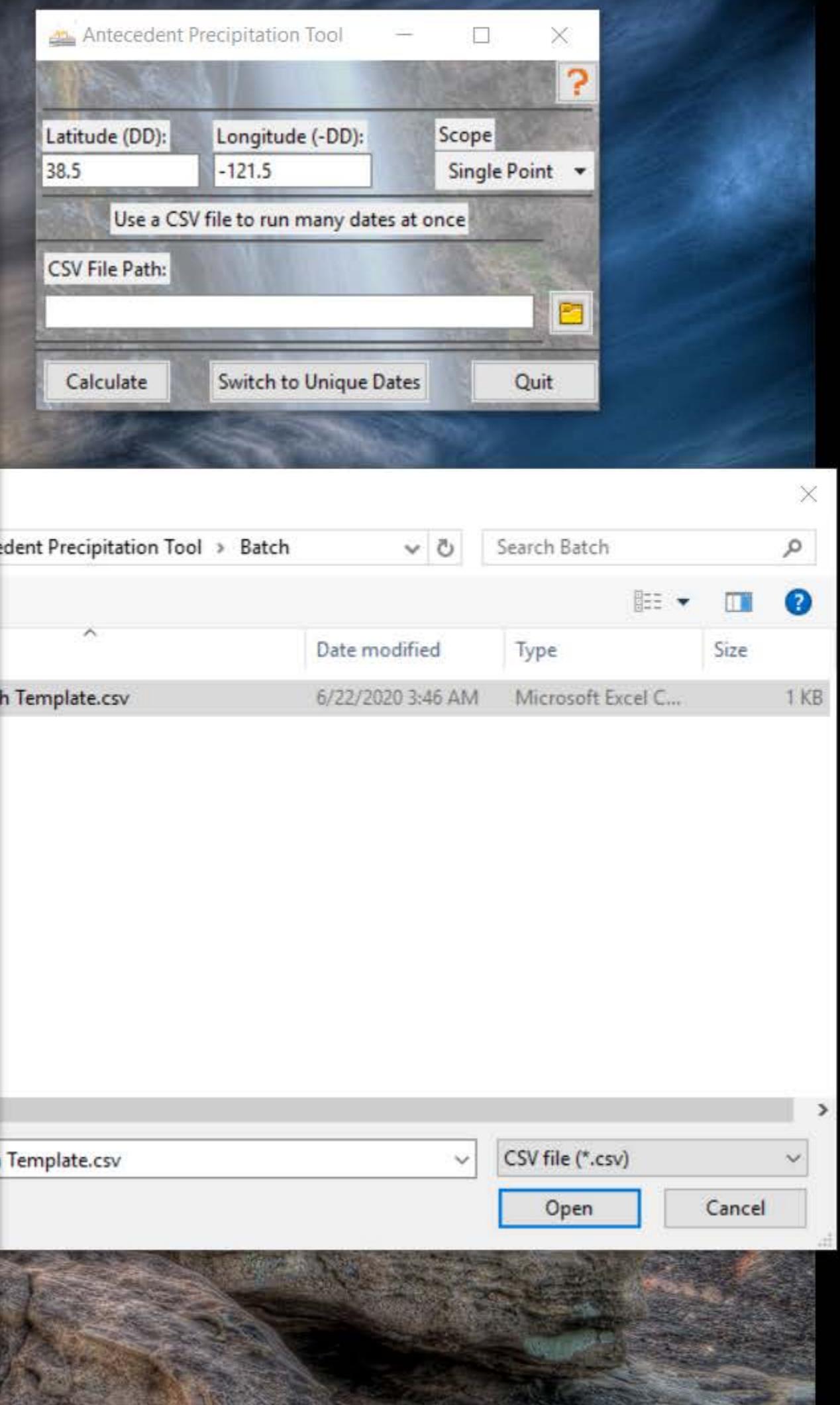


Validating Desktop shortcut...

++++ +++ +++++  
hNNN +NNNy hNNm  
hMMNhMMMyMmMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyMMMMMyymMMh+ hMMNyMMMMhymMMs  
dMMm MMMMM dMMN NMMN NMMMM+ dMMMs  
dMMm MMMMM+ dMMm mMMN NMMMM+ dMMMs  
+dMMNm++MMMMMdNMMm mMMddMMMMMo+dMMNh  
hMMMMMNMMMMMMMMNm mMMMMMMMMNNNMMMMNs  
hMMMMMMMMMMMMMMMNhhhhhhhNMMMMMMMMMMMMMMo  
ymmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm

APT Batch Template.csv

FILE	HO	INSE	PAG	FOR	DAT	REVI	VIE	PRO	ACR	TEA	Deters, Ja
B31											
	X	✓	fx	10							
	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								



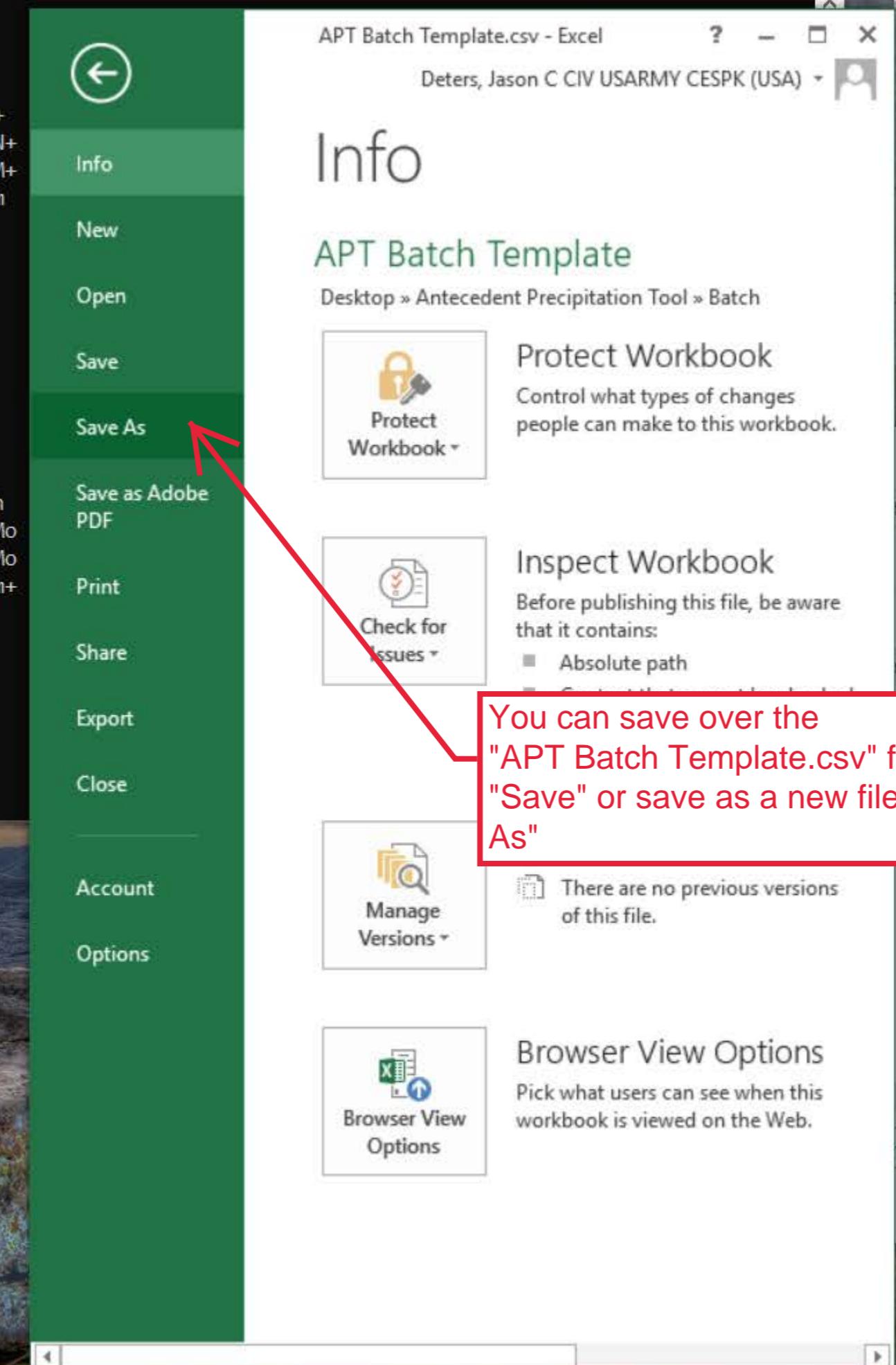
Once all desired dates are entered, save the file by first clicking the "File" button.



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...



Validating Desktop shortcut...

```
++++ +++ ++++
hNNN +NNNy hNNm      +++ ++++
yNNN+ mNNd oNNN+
hMMhMMmymMMN      hMMhyNMMyhMM+
sNMMMMMMMMMMMd      syyo syyy yyys
+mMMMMMMMMMMMs      NMMh mMMMo+MMMN
dMMm++MMMM+      NMMNMMMMNNMMN
dMMm MMM+      yNMMMMMMMMMMMy
dMMm MMM+      sMMMMMMMMMm+
dMMmooMMMyyyyyyhhMMMMMMMMMyyyyyydMMMsodMMMs
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs
dMMMMMMMMMMMMMMMMMMMMNhysshMMMMMMMMMMMMMMMMMs
dMMNyMMMyymMMh+      hMMNyMMMyhmMMs
dMMm MMM dMMN      NMMN NMMMM+ dMMMs
dMMm MMM+ dMMm      mMMN NMMMM+ dMMMs
+dMMm++MMMMMdNNMm      mMddMMMMMo+dMMNh
hMMMMNNMMNNMMNNMMMo      mMmmMMNNNNNNMMMo
hMMMMMMMMMMMMNNhhhhhNMMMMMMMMMMMMMo
ymmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm+
```

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

Quick access

- ~Resources
- Links
- Regulatory
- delete
- Desktop
- Downloads
- Documents
- Pictures

Microsoft Excel

- This PC
- 3D Objects
- Desktop
- Documents
- Downloads
- Music
- Pictures

Videos

- OSDisk (C:)
- DATA (D:)

Network

File name: 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

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

Antecedent  
Precipitati...

Validating Desktop shortcut...

```
+++ +++ ++++
hNNN +NNNy hNNm      +++ ++++
hMMNhMMmymMN      yNNN+ mNNd oNNN+
sNMMMMMMMMMMMd      syyo syyy yyys      sNMMMMMMMMMMMm
+mMMMMMMMMMMMs      NMMh mMMMo+MMMN      +dMMMMMMMMMMh
dMMm++MMMN+      NMMNMMMMNNMMN      yMMMo+dMMMs
dMMm MMM+      yNMMMMMMMMMMMy      yMM+ dMMMs
dMMm MMM+      sMMMMMMMMMMm+      yMM+ dMMMs
dMMmooMMMyyyyyyhhMMMMMMMMMyyyyyydMMMsodMMMs
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs
dMMMMMMMMMMMMMMMMMMNhysshMMMMMMMMMMMMMMMMMs
dMMNyMMMyymMMh+      hMMNyMMMyhmMMs
dMMm MMM dMMN      NMMN NMMMM+ dMMMs
dMMm MMM+ dMMm      mMMN NMMMM+ dMMMs
+dMMm++MMMMMdNMm      mMddMMMMMo+dMMNh
hMMMMMNMMNNMMMMMMm      mMMMMMMMMNNNNMMMMo
hMMMMMMMMMMMMNNhhhhhNMMMMMMMMMMMMMMMo
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

Quick access

- ~Resources
- Links
- Regulatory
- delete
- Desktop
- Downloads
- Documents
- Pictures

Microsoft Excel

- This PC
- 3D Objects
- Desktop
- Documents
- Downloads
- Music
- Pictures

Videos

- OSDisk (C:)
- DATA (D:)

Network

File name: Example - APT Batch Template.csv

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

Authors: Deters, Jason C CIV US...

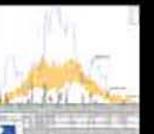
Tags: Add a tag

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  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyMMMMMyymMMh+ hMMNyMMMMMyhmMMs  
dMMm MMMMM dMN  
dMMm MMMMM+ dMM  
+dMMm+++MMMMMdNMM  
hMMMMMNMMMMMMMM  
hMMMMMMMMMMMMNNhhhhhNMMMMMMMMMMMMMM  
ymm

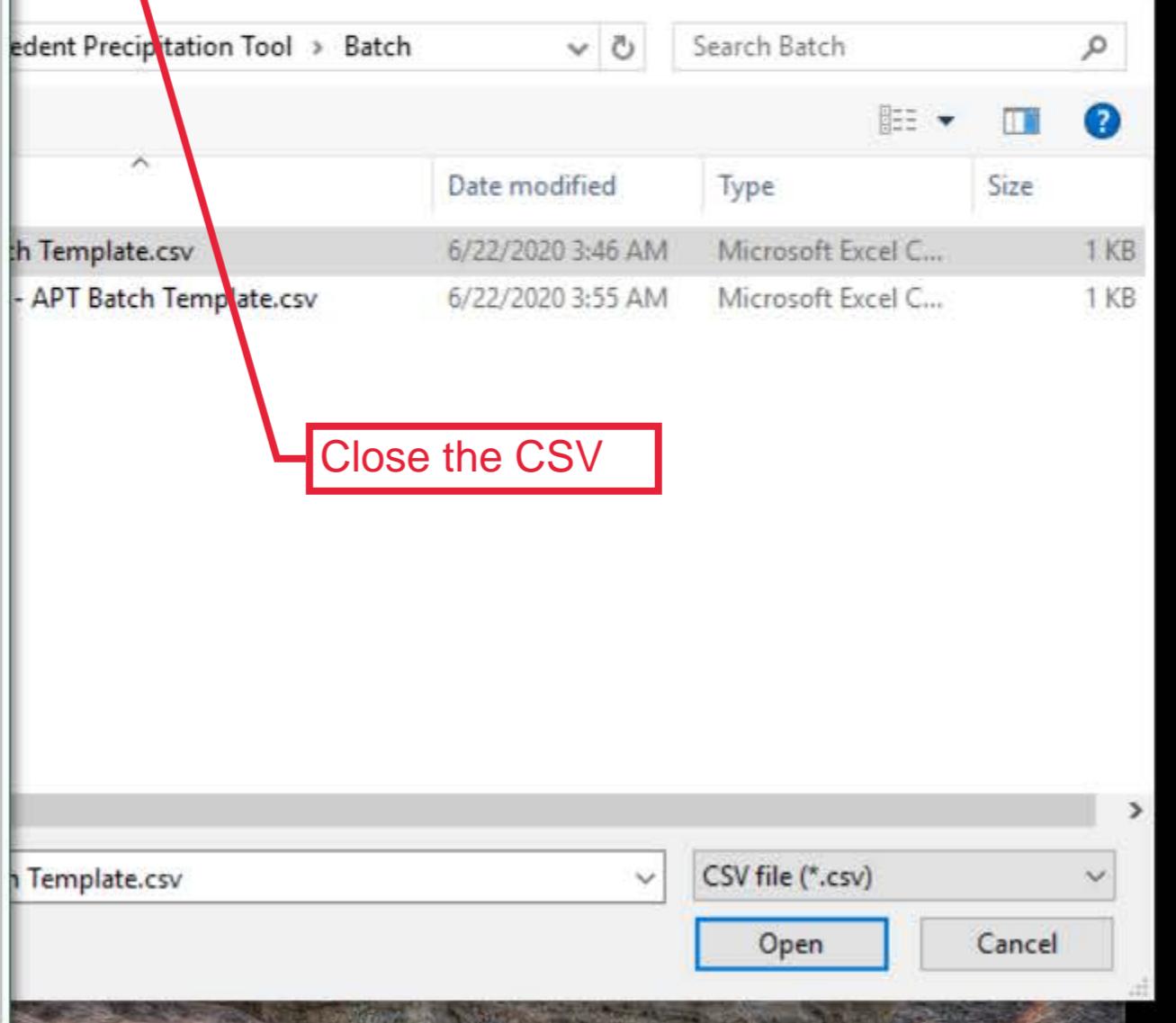
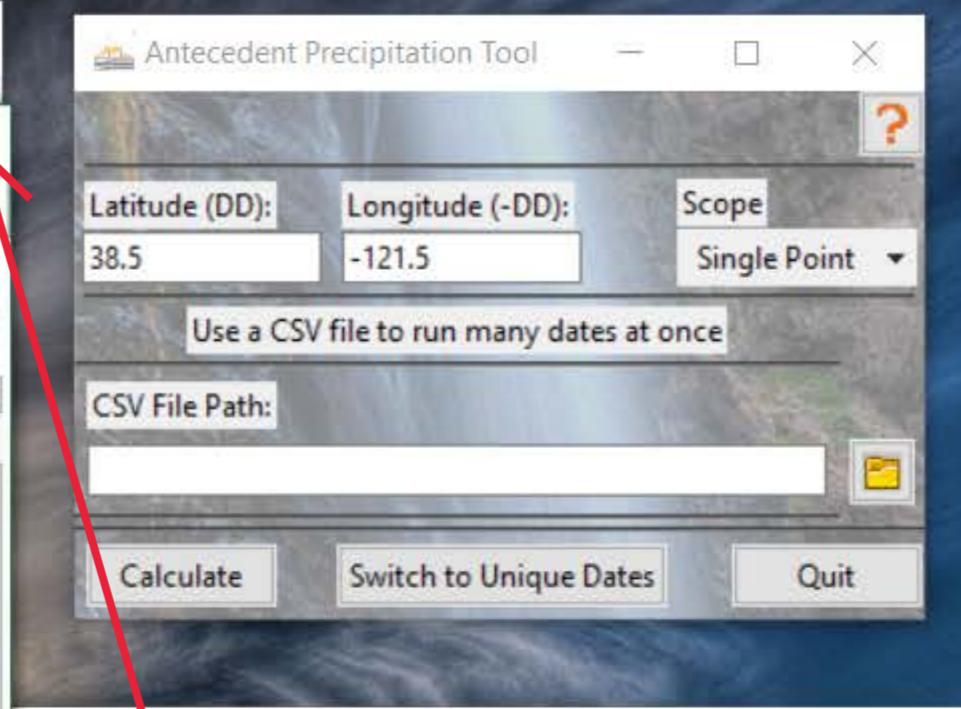
Launching Graphical User Interface...



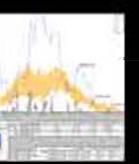
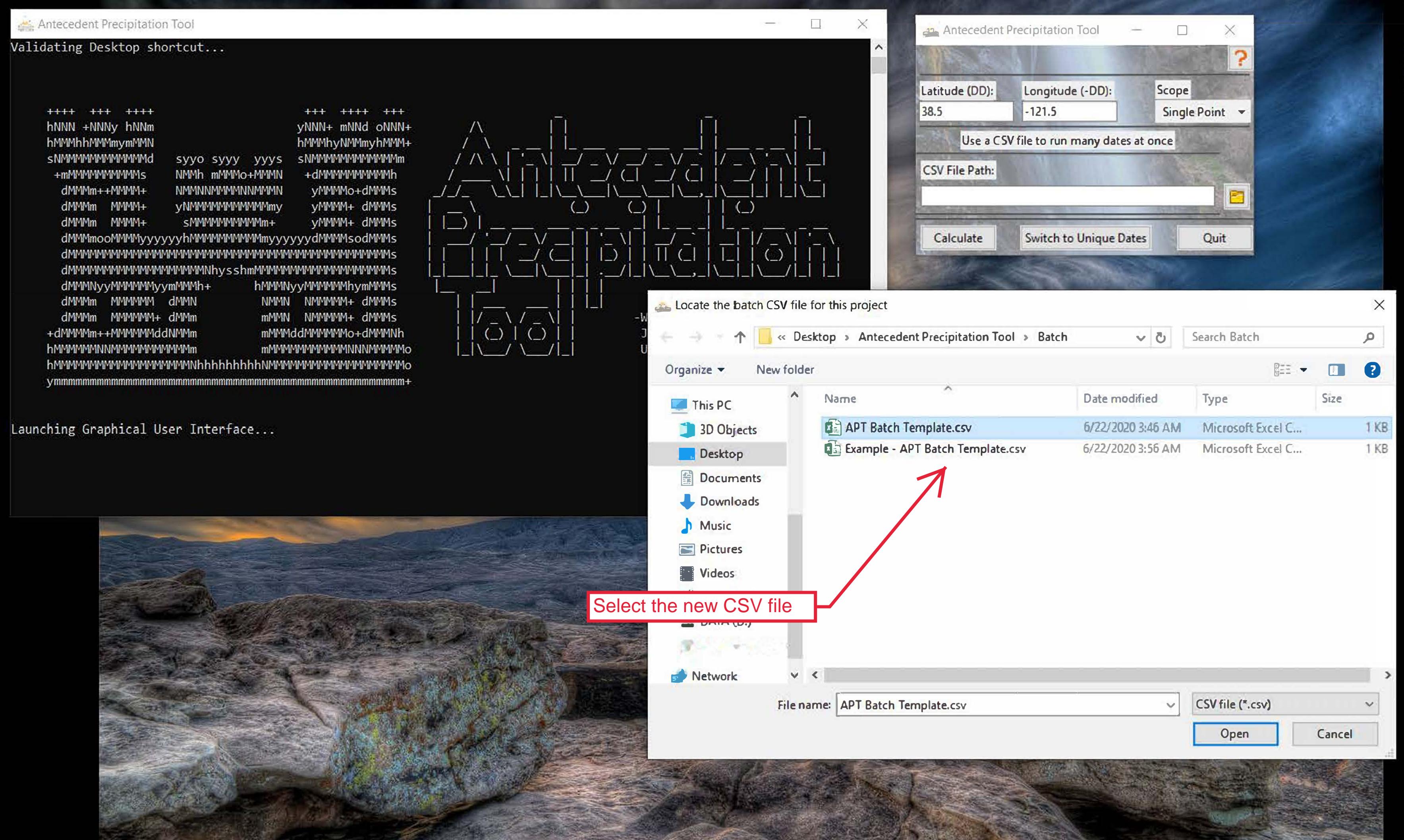
	A	B	C	D	E
2	1967	10	31		
3	1969	1	22		
4	1972	4	10		
5	1972	9	2		
6	1973	3	15		
7	1973	5	18		
8	1978	3	7		
9	1979	2	2		
10	1980	6	5		
11	1982	5	28		
12	1986	1	1		
13	1986	4	22		
14	1987	11	12		
15	1989	12	15		
16	1990	2	14		
17	1990	5	11		
18	1990	9	13		
19	1991	2	4		
20	1991	4	8		
21	1991	11	29		
22	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

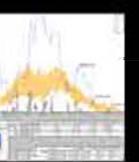
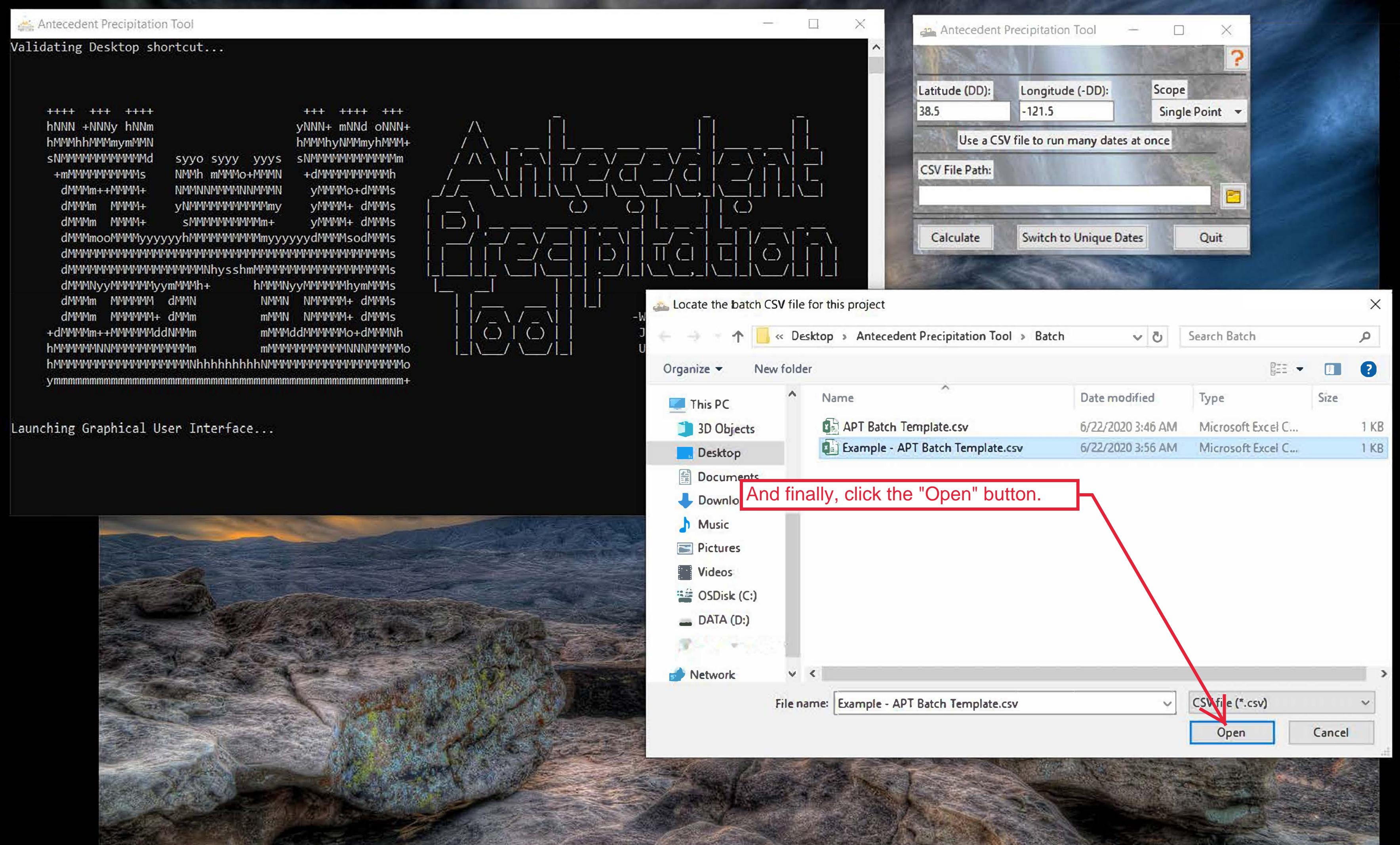
READY



Close the CSV



## Antecedent Precipitati...



## Antecedent Precipitati...



Validating Desktop shortcut...

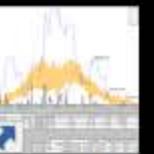
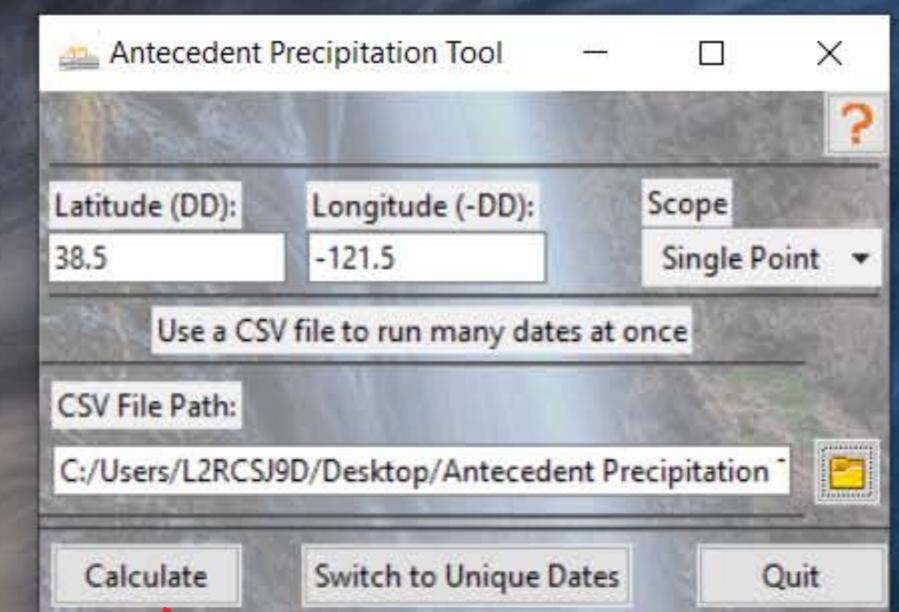
++++ +++ +++++  
hNNN +NNNy hNNm  
hMMhMMmymMN  
sNMMMMMMMMMMMd  
+mMMMMMMMMMs  
dMMm++MMMM+  
dMMm MMM+  
dMMm MMM+  
dMMmooMMMyyyyyy hMMMMMMMMMyyyyyy dMMMsodMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMs  
dMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMNs  
dMMNyyMMMMMyymMMh+ hMMNyyMMMMMyhmMMs  
dMMm MMMMM dMN 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



-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...

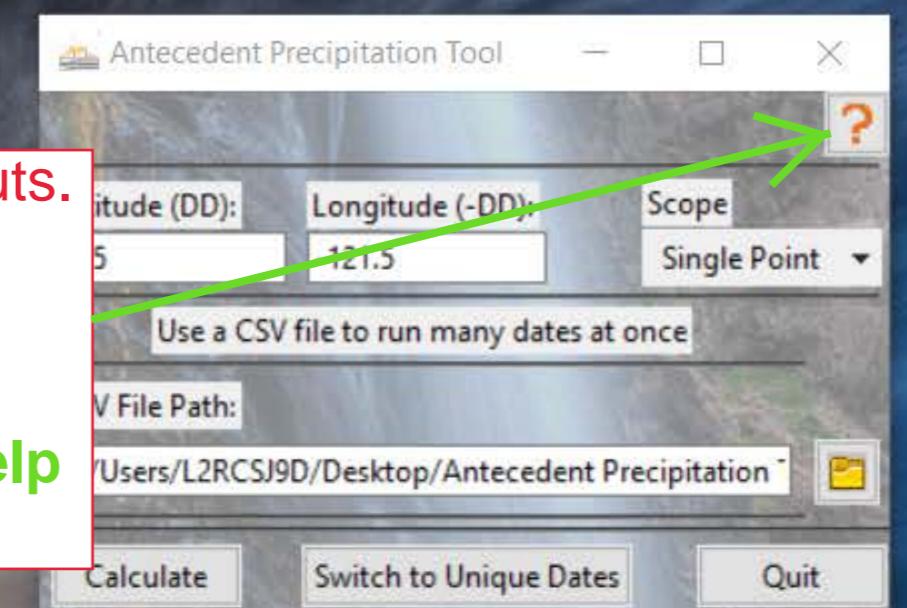
Opening finalPDF in new process...

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**.



Antecedent  
Precipitati...





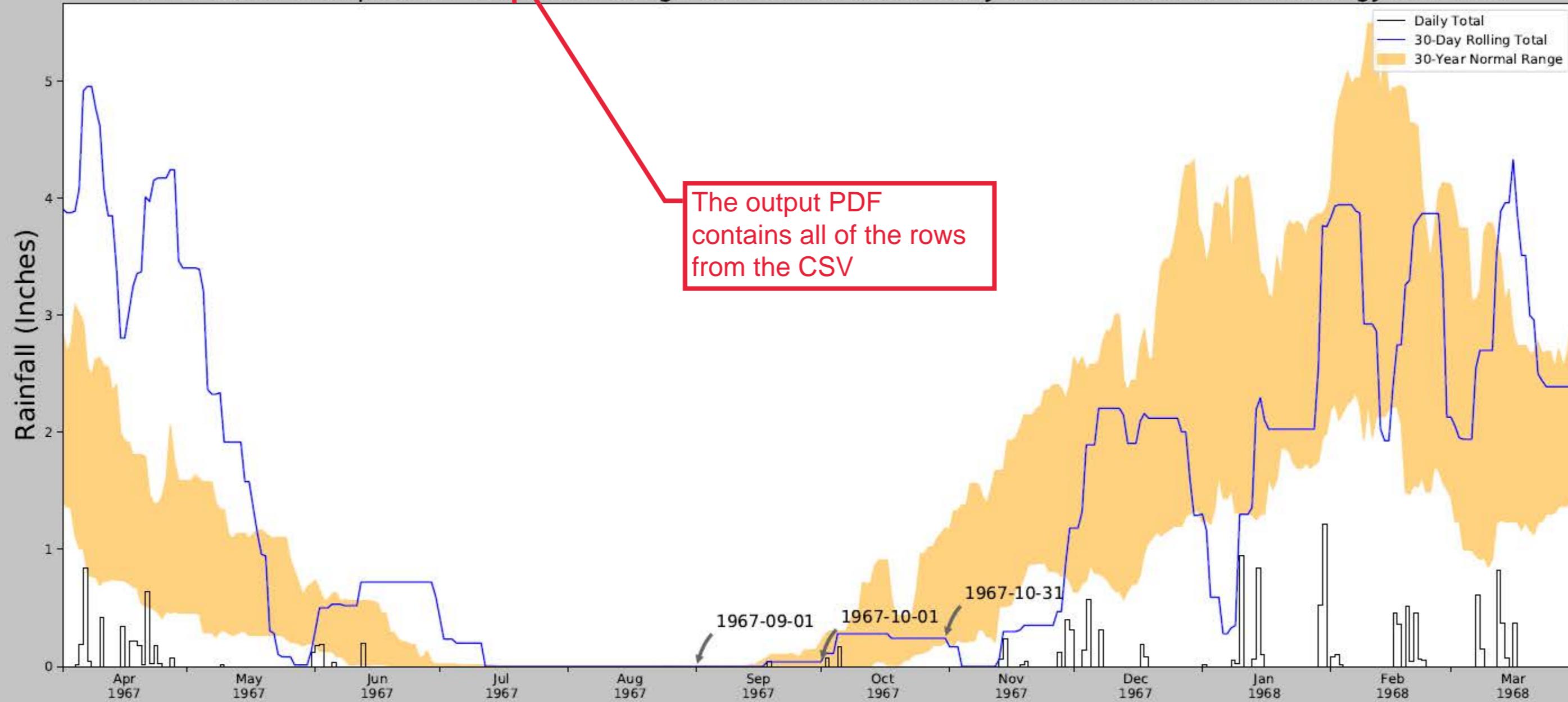
1 / 30



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

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	

```

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

```

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	Antecede	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

(38.5, -121.5) Batch Result

READY



# 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

Search 38.5, -121.5



Dates Quit

#--  
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

All tasks took 1 minutes and

Ready for new input.



33 items 1 item selected

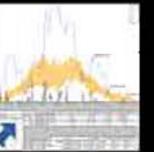
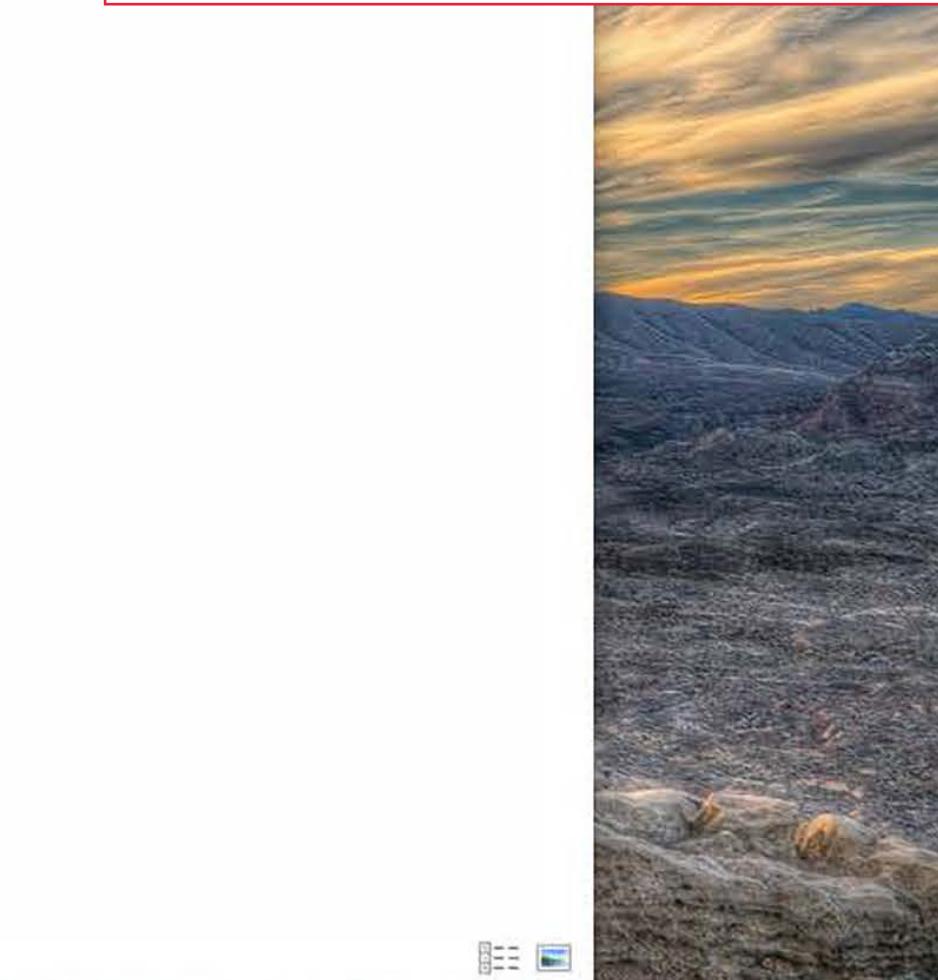
# Antecedent Precipitation Tool

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

Use a CSV file to run many dates at once

Antecedent Precipitation Dates Quit

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



Antecedent  
Precipitati...