

Tracker Readme file

Tracker is a Visual Basic program that will calculate the altitude of a sport rocket from tracking angles provided by two-station tracking systems. Two methods are available for calculation, the standard “Vertical Mid Point”, or the “Geodesic” method. These methods (and the formulas) are described in the “*United States Model Rocket Sporting Code*”, published by the National Association of Rocketry (www.nar.org) .

The program allows the user to save the computed altitudes to a text file for printing or import to a spreadsheet. Multiple flyers and events can be saved to the file.

Installation

To install, double-click the “setup.exe” program. You will be prompted to enter the desired location of the program. Setup will handle the rest.

Operation

When you start Tracker, the main panel will appear:

ModRoc Tracker

Model Rocket Tracking Altitude Calculator

Baseline: 500

Tracking East: Azimuth (East): 0, Elevation (East): 0

Tracking West: Azimuth (West): 0, Elevation (West): 0

Calculation Method: ☒ Vertical Mid Point, ☐ Geodesic

Maximum Altitude: 0

% Error: 0

Buttons: Calculate, Save to file, Exit

The default baseline is 500 units (the calculated altitude will be in the same units as the baseline, feet or meters). Type in the value you will be using for the session.

Enter in the azimuth and elevation angles from each tracking station

ModRoc Tracker

Model Rocket Tracking Altitude Calculator

Baseline:

Tracking East	Azimuth (East)	<input type="text" value="90"/>
	Elevation (East)	<input type="text" value="45"/>
Tracking West	Azimuth (West)	<input type="text" value="50"/>
	Elevation (West)	<input type="text" value="40"/>

Maximum Altitude:

% Error:

Calculation Method:

☒ Vertical Mid Point

☐ Geodesic

Calculate

Save to file

Exit

Pressing “Calculate” will compute the altitude and percent error in the track.

ModRoc Tracker

Model Rocket Tracking Altitude Calculator

Baseline:

Tracking East	Azimuth (East)	<input type="text" value="90"/>
	Elevation (East)	<input type="text" value="45"/>
Tracking West	Azimuth (West)	<input type="text" value="50"/>
	Elevation (West)	<input type="text" value="40"/>

Maximum Altitude:

% Error:

Calculation Method:

☒ Vertical Mid Point

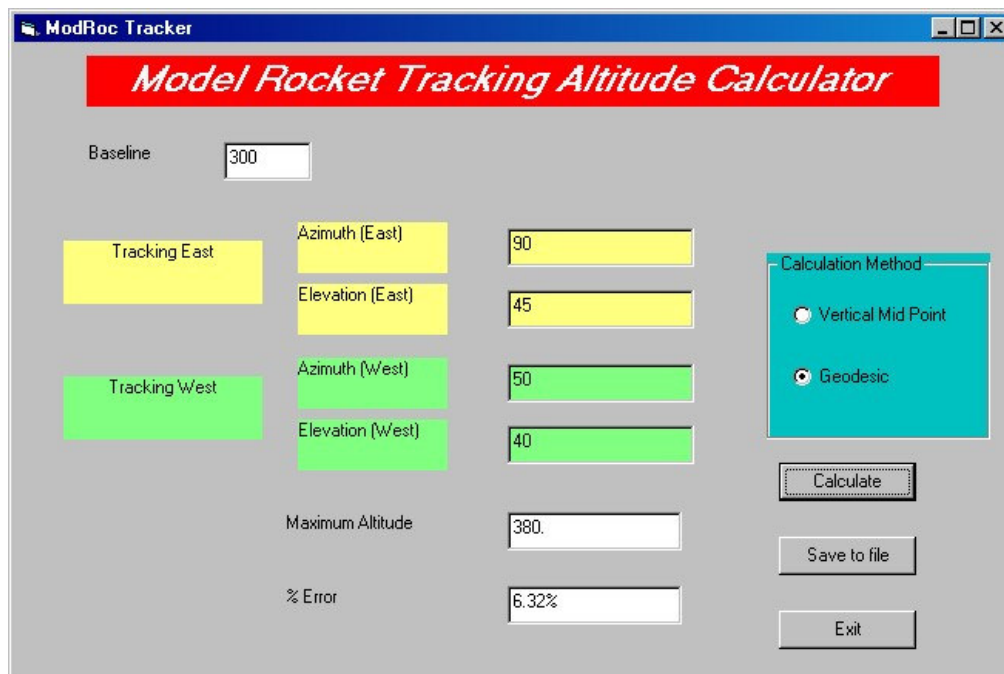
☐ Geodesic

Calculate

Save to file

Exit

If you desire to use the “Geodesic” tracking method, select that radio button and re-compute the altitude



ModRoc Tracker

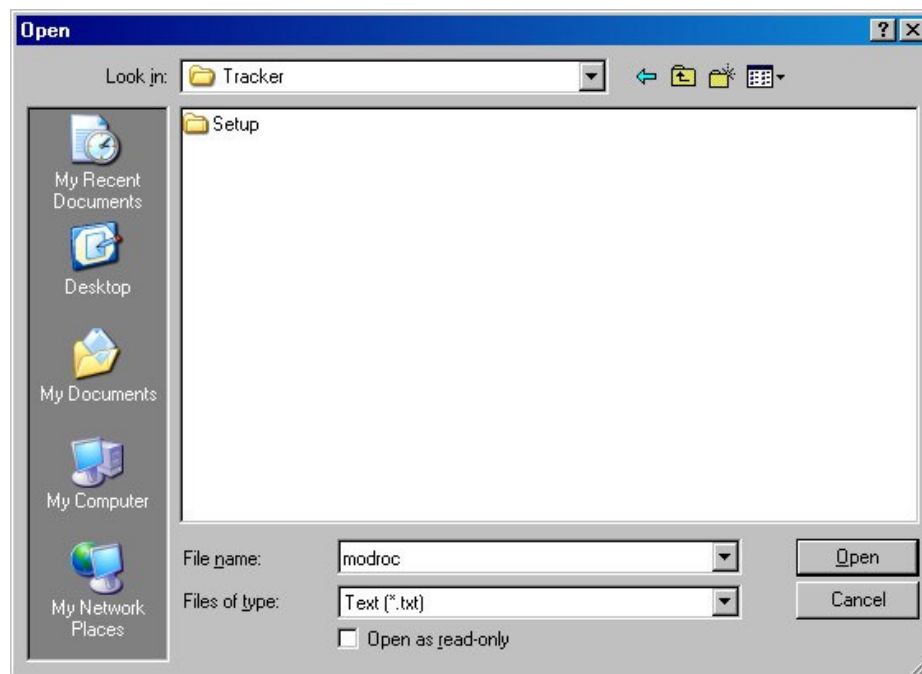
Model Rocket Tracking Altitude Calculator

Baseline:

Tracking East	Azimuth (East)	<input type="text" value="90"/>	Calculation Method <input type="radio"/> Vertical Mid Point <input checked="" type="radio"/> Geodesic
	Elevation (East)	<input type="text" value="45"/>	
Tracking West	Azimuth (West)	<input type="text" value="50"/>	
	Elevation (West)	<input type="text" value="40"/>	

Maximum Altitude:
 % Error:

If you are running a meet and want to save multiple flyers' results, press the "Save to file" button, and the file directory dialog will open.



Open

Look in: Tracker

- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

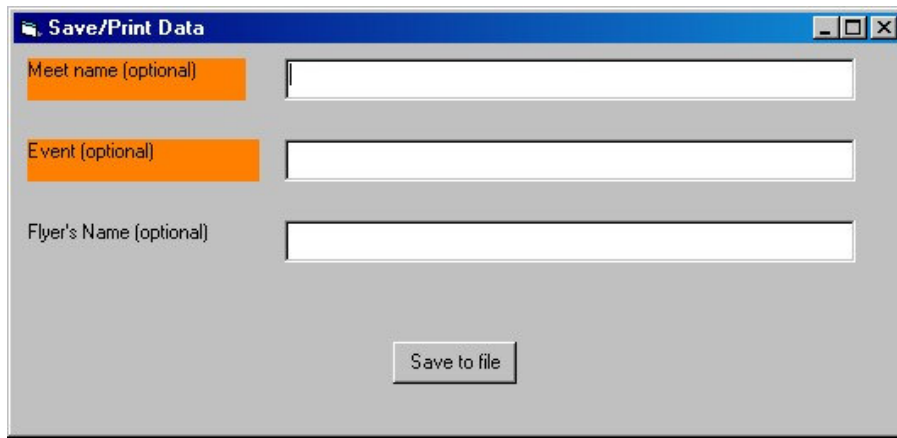
Setup

File name: modroc

Files of type: Text (*.txt)

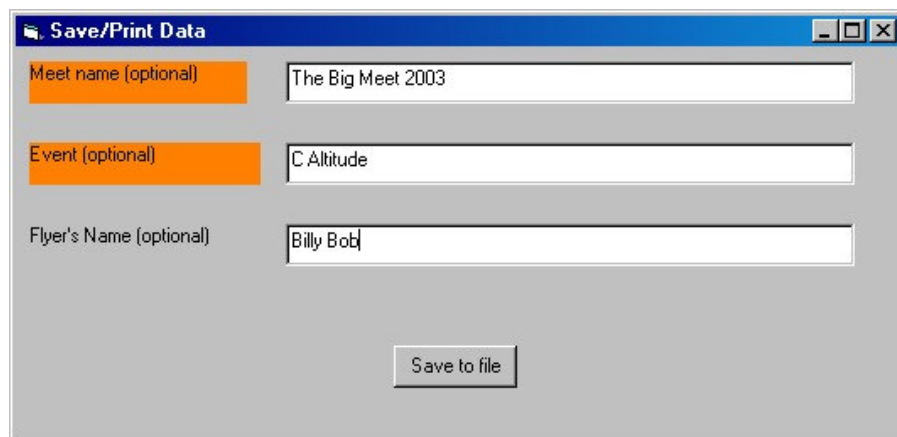
☐ Open as read-only

Enter in a new file name, or select an existing file to be overwritten. Tracker will save the output in a comma delimited text file that can be opened with text file reader, like Notepad, or the file can be imported into a spreadsheet.



The image shows a Windows-style dialog box titled "Save/Print Data". It has a blue title bar with standard window controls. The main area is light gray and contains three input fields, each preceded by an orange label box. The labels are "Meet name (optional)", "Event (optional)", and "Flyer's Name (optional)". The input fields are empty. At the bottom center is a button labeled "Save to file".

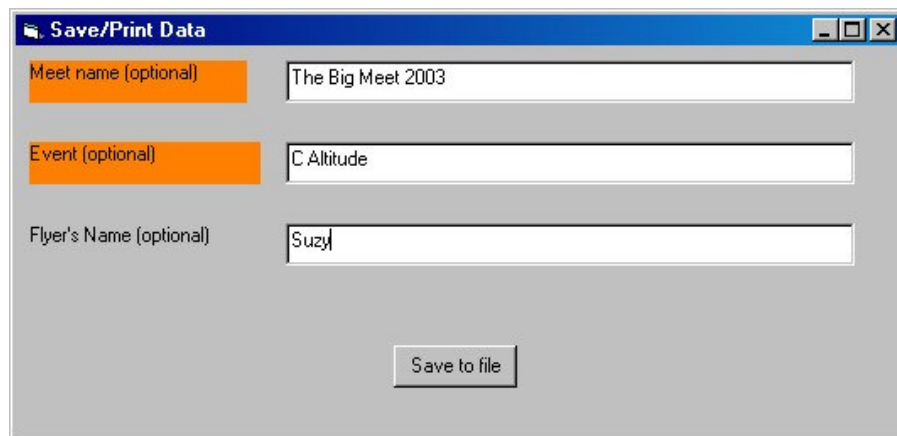
When the output file is opened, the Save/Print dialog box will open. Fill in the boxes with the name of the meet, the event being flown, and the current flyer's name or identification.



The image shows the same "Save/Print Data" dialog box, but now the input fields are filled with text. The "Meet name (optional)" field contains "The Big Meet 2003", the "Event (optional)" field contains "C Altitude", and the "Flyer's Name (optional)" field contains "Billy Bob". The "Save to file" button remains at the bottom.

Pressing "Save to file" will write the current flyer's results and other data to the file, and you will return to the main screen to input more tracking data.

The "Save/Print" fields will remain as-typed until you change them, so if you fly several different events in a meet, only the event and flyer name will need to be changed.



The image shows the "Save/Print Data" dialog box again. The "Meet name (optional)" field still contains "The Big Meet 2003". The "Event (optional)" field still contains "C Altitude". However, the "Flyer's Name (optional)" field now contains "Suzy", indicating a change from the previous state. The "Save to file" button is still present.

After all the events are flown, or you are finished calculating altitudes, press "Exit" to close the program.

Use Windows Explorer to navigate to the data file and open it with a text reader. The file will appear similar to Table 1.

Table 1. Output from Tracker

```
"Meet ", "The Big Meet 2003"
"Event ", "C Altitude"
"Baseline = ", "300", "    Method = ", "Vertical Mid Point"
"Flier", "Altitude", "% Error"
"Billy Bob", "374.6", "4.55%"
"Suzy", "204.9", "26.79%"
"Carl", "735.9", "12.1%"
"Fred", "1494.2", "22.11%"
"Event ", "B Altitude"
"Baseline = ", "300", "    Method = ", "Vertical Mid Point"
"Flier", "Altitude", "% Error"
"Fred", "454.9", ".%"
"Suzy", "539.9", "8.37%"
"Billy Bob", "743.6", "1.05%"
```

This output looks better imported into a spreadsheet. The results can then be sorted by altitude to determine the winners!

	A	B	C	D	E	F	G	H
1	Meet	The Big Meet 2003						
2	Event	C Altitude						
3	Baseline =	300	Method =	Vertical Mid Point				
4	Flier	Altitude	% Error					
5	Billy Bob	374.6	4.55%					
6	Suzy	204.9	26.79%					
7	Carl	735.9	12.10%					
8	Fred	1494.2	22.11%					
9	Event	B Altitude						
10	Baseline =	300	Method =	Vertical Mid Point				
11	Flier	Altitude	% Error					
12	Fred	454.9	.%					
13	Suzy	539.9	8.37%					
14	Billy Bob	743.6	1.05%					
15								
16								

I hope this program is useful to you.

David Stribling
NAR 18402 SR

rocketguy101@hotmail.com