CELESTRON®

◀reTrace™
DELUXE

INSTRUCTION MANUAL

MODEL 44856 / 44857

reTrace™ Deluxe Interface

1. Scroll Key
2. Change Settings Key
3. Power Key
4. Set Key
5. Satellite Signal Strength Icon
6. Data Log Icon
7. Clock/Time of Day
8. Battery Status Icon
9. Latitude and Longitude Reading
10. Main Screen (Compass Mode Shown)

INSTALL BATTERIES

Unscrew the latch on the back of your reTrace™ Deluxe to access the battery compartment. Insert two "AAA" alkaline or lithium batteries in the direction marked inside the battery compartment. Replace cover and screw down securely. Replace the batteries when the display's "Battery" icon indicates low power.

2 AAA batteries (not uncluded)

Turn the unit on by *pressing* and *holding* the POWER key for 3 seconds. Powering outdoors with a clear view of the sky will ensure good quality GPS reception. If this is the first time you are turning on your reTrace™ Deluxe, the Compass window will appear.
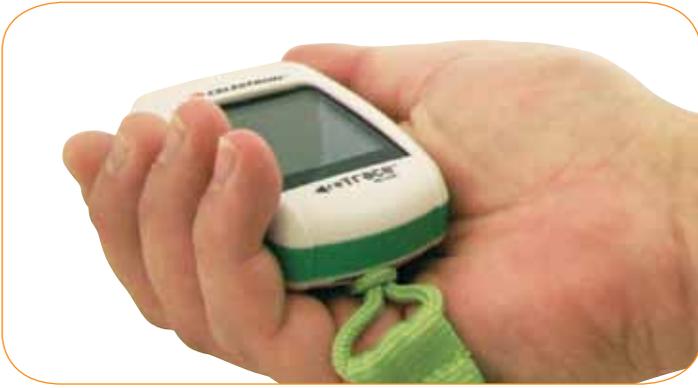

Start Up Page

Compass Window

I. COMPASS

The Compass window is the default window when reTrace is activated for the first time. Use it like a normal compass by holding in the palm of your hand as level (parallel) with the ground as possible. (This will ensure the most accurate reading.) The arrow will always point to true North giving you your relative direction. *NOTE: You may need to calibrate the compass. To do this, move the compass in a "Figure 8" pattern a few times as shown below.*
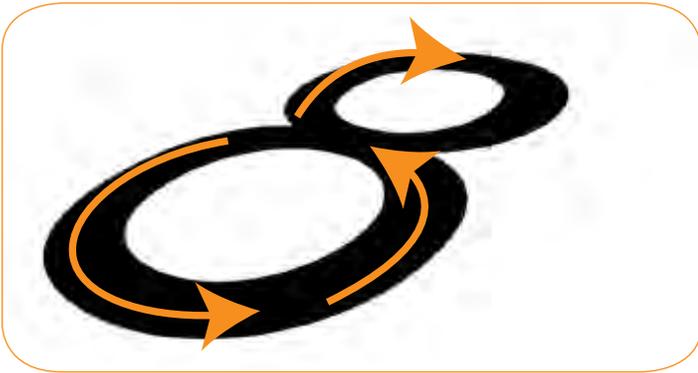
To see your current Latitude and Longitude reading, *press* and *hold* the SET key. The reading will automatically go away 3 seconds after you release the SET key.

Latitude and Longitude Reading

II. WAYPOINTS/POINTS OF INTEREST (POIs)

WAYPOINT PAGE ICONS

1. 32 Way Arrow – The 32 Way Arrow points in the direction of your saved Waypoint or POI. If the GPS signal is not fixed, the display will be empty. If the current window has no POI assigned, the arrow with be gray.

2. Waypoint Icon- You can choose and store 20 unique Waypoint Icons to help you keep track of your marked places. *NOTE: Waypoints are also referred to as POIs or Points of Interest.*

3. Distance to Waypoint Display – This readout will display the distance to your selected Waypoint. *NOTE: This is the straight line distance and does not reflect the actual distance you have traveled.* If the GPS signal is not fixed, the display will look as follows: _ _ _._. The maximum distances are 0 to 1760 yards, 1-9999 miles, 0 to 1000m and 1 to 9999km.

4. Time – The time of day is displayed here.

5. Waypoint Number – The number you assign to your Waypoint or POI.

The reTrace™ Deluxe allows you to save 20 unique Points of Interest (POIs) or Waypoints. In other words, by using your reTrace™ Deluxe, you will be able to retrace your steps back to your favorite locations – anywhere in the world. These could be camping spots, fishing spots, a secret location, your favorite restaurant or where you parked your car.

SETTING YOUR WAYPOINTS/POIs

STEP 1. Assign A Number

When you are standing at your POI, the first thing you will do is assign a number to this POI. *Press* the CHANGE SETTING key and/or SET key to toggle through the numbers 1-20 in the upper left of screen as described above.

STEP 2. Choose a Waypoint Icon

Once you are satisfied with the number, *press* and *hold* your CHANGE SETTING key for 3 seconds to pull up your Select Icon screen (A). Using your SCROLL and your CHANGE SETTINGS keys, toggle through the different icons until you find the one you like (B). *Press* the SET key once to record the change then press again to return to the main screen (C).

(A)   (B)

(C)
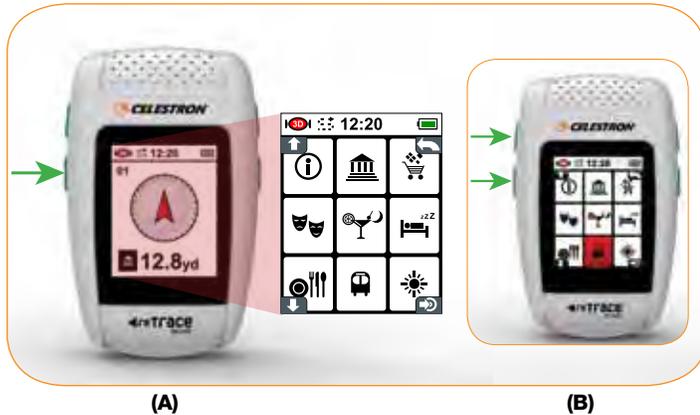
STEP 3. Mark the Spot

You are now ready to set your POI or "mark" the spot, saving the coordinates in the device's memory. *Press* and *hold* the SET key until the display reads 0.0

It's that simple. The coordinates are now saved. As you move away from the marked spot, you will notice the distance on the screen increase, and the arrow will point back in the direction of the freshly marked POI. When you want to retrace your steps and find your way back to any POI you have saved, just go to the Waypoint

Page, toggle through and select the saved waypoint number, then look at the direction of the arrow and the displayed distance.

From the Waypoint screen, *press* the SCROLL key to get to the next screen. If you have a POI open, the next page will be the Trail Monitor page. If you don't have a POI selected, the next page with be the Temperature and Altitude screen.

III. NAVIGATING

TRAIL MONITOR PAGE

This powerful extra layer of detailed positional information is displayed in a simple, easy to read format and gives the user a host of visual tools to help in pinpointing their position and orientation.
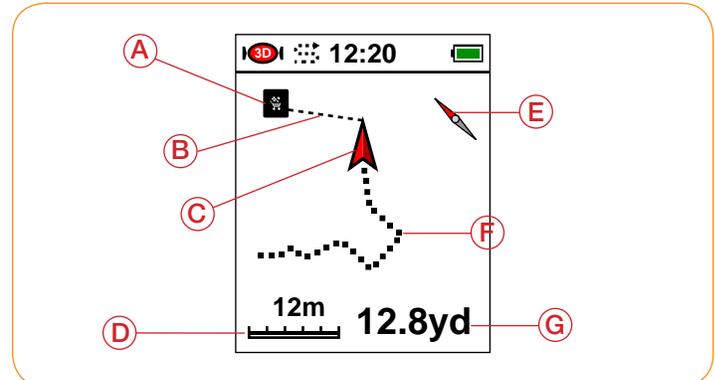
A. Waypoint / POI or Trail Head Icon

B. **Distance Line:** Shows direct distance from your position to the marked POI or trailhead

C. **Position Arrow:** Shows your position relative to trailhead, your orientation, and direction you are traveling

D. **Scale Setting:** Scale setting auto adjusts depending on your distance

E. **Compass Needle:** Points North, helping to determine your direction and position relative to the POI

F. **Data Log Trail:** Dotted line showing the path taken relative to the POI. This is based on recorded GPS data points

G. **Distance to POI:** Numeric display gives straight line distance to the POI

There are 2 modes that the Trail Monitor Page is used for.

1. **POI or Waypoint Mode:** The Trail Monitor page automatically tracks your 'trail" when a POI or waypoint is selected. In this mode it is not recording the trail, but giving extra information to the user by displaying the trail you have taken with all the curves and bends. It also displays the mini compass arrow, the straight line trail to the POI, the distance from the POI and a scale reading.

2. **Trail Data Recording:** This is the hidden power of the reTrace™ Deluxe. Depending on the time interval settings (see Data Log Period setting – in Settings section) the reTrace™ Deluxe can save from 14 hours to 50,000 hours of data! That's not a misprint. The design of the reTrace™ Deluxe allows the user to choose the recording interval, which is from 1 second to 3600 seconds (or 1 hour), making this possible. What is a data point, you ask? A data point is a snapshot of your

geographical position and the conditions around you at a specific instant in time. This snapshot includes your GPS coordinates, the time, the temperature, your altitude and barometric pressure. This data is recorded and saved to memory. Once uploaded to the computer through the reTrace™ Deluxe software, the data points are strung together and this makes up your data log. The information is displayed in graphs and charts. The trail is overlaid on a Google® map.

To set the reTrace™ Deluxe to record trail data, while in any screen, *press* and *hold* the SCROLL key until the Data Log icon is displayed on the top of the screen next to the clock.

Data Log Icon

Your trail data is now being recorded. To turn off the trail data recording function, *press* and *hold* the SCROLL key until the Data Log icon goes away.

From the Trail Monitor screen, *press* the SCROLL key to get to the next screen – the Altitude and Temperature screen.

IV. ALTITUDE AND TEMPERATURE

THE ALTITUDE/TEMPERATURE PAGE

In this screen, the temperature and altitude are displayed in easy to read large numbers. To change the units, go to the Settings section.
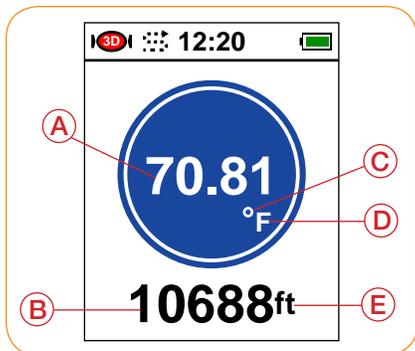

A. Temperature Reading

B. Altitude Reading

C. Temperature Degree Icon

D. Temperature Unit (°F or °C)

E. Altitude Unit (Ft-feet or M-meters)

From the Altitude and Temperature screen, *press* the SCROLL key to get to the next screen – the Barometer.
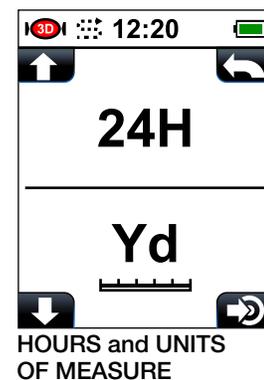
V. BAROMETER

THE BAROMETER PAGE

A simple and clearly displayed chart showing both the change in barometer pressure and the current barometer reading. The chart is created by the pressure being recorded at specific time intervals. The default time interval is 5 minutes. You can change the recording time intervals through your settings. The units of measure can also be chosen in your settings.
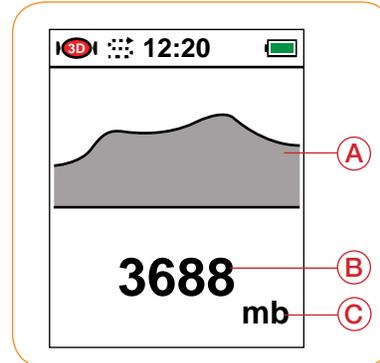

A. **Barometer Data Chart:** A graphical representation of the barometric pressure. Maximum number of recorded points is 120. Time between points is determined in Settings.

B. **Barometer 4 Digit Value**

C. **Barometer Units of Measure:** Mb=millibars, Hg=millimeters of mercury

VI. SETTINGS

From the Compass page, *hold* the CHANGE SETTINGS key for 3 seconds. This will open up your Settings mode. Five windows are accessible in the Settings mode. Each window is split between two "set-able" functions. Using the SCROLL and the CHANGE SETTINGS keys, toggle through the settings windows. The windows will appear in the following order. (A red background means that function is highlighted.)
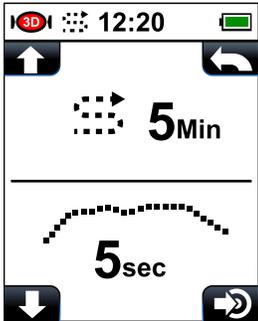

TIME and TEMPERATURE

HOURS and UNITS OF MEASURE

Map data ©2011 Google
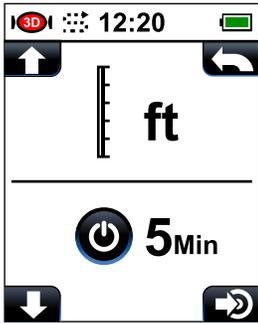
ALTITUDE UNITS and AUTO POWER OFF

ft

5Min
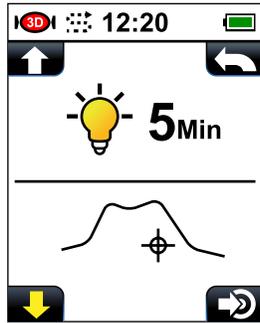
BACKLIGHT AUTO OFF and ALTITUDE BENCH-POINT

5Min

DATA LOG PERIOD and BAROMETER RECORD TIME

5Min

5sec

*To return to the Compass page, *press* the POWER key quickly once.

a. Time Zone Setting

+08:00

In order to guarantee an accurate clock reading for your reTrace™ Deluxe, the clock is based on GMT (Greenwich Mean Time). The default setting is +8:00, which means most users will need to adjust the time. This is a very simple undertaking. Follow these steps:

1. Refer to the GMT Zone map below, find your zone and its + or – setting.

2. Make sure time is highlighted red in the settings window.

3. *Press* your SET key. This will bring up a full window with the clock setting of +8:00.

+08:00

4. *Press* SCROLL or CHANGE SETTINGS to toggle through the GMT settings until you find your setting number.

5. *Press* the SET key to make your selection. This will return you to the setting window.

NOTE: GMT does not account for Daylight Savings. If you are in the US and it is summer, add 1 hour to your setting. For example, if you are located on the west coast, your GMT setting would be -8:00. To account for daylight savings, add 1:00 to show the correct setting of -7:00.

GMT Zones Map

-12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 GMT +1 +2 +3 +4 +5 +6 +7 +8 +9 +10 +11 +12
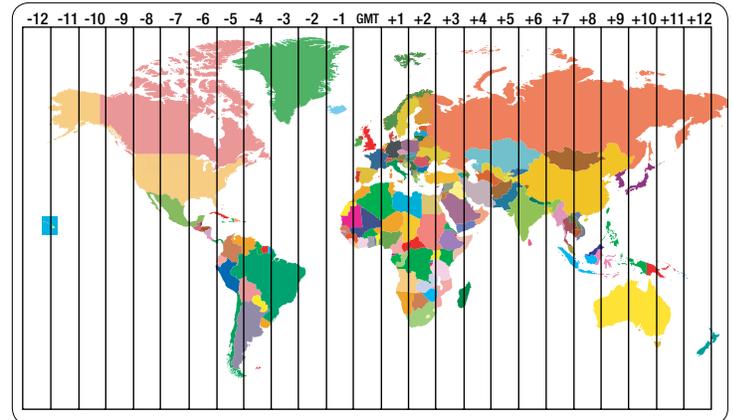
b. Temperature Unit Setting

°C
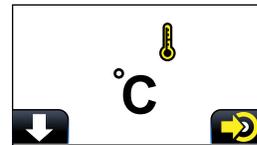
You can choose the temperature unit of measure here. The default setting for the temperature unit is °**F**. Changing Unit Setting is easy. With the Temperature Unit Setting window highlighted, *press* your SET key once. °**C** should now be displayed. To go back to °**F**, *press* your SET key again.

c. Time Format Setting

24H

The default time format of the device is set to **12H**. To change to **24H**, *press* your SET key once. To go back to **12H**, *press* your SET key again.

d. Distance Unit Setting

Yd

You can set your distance unit settings between Metric and Imperial Standards. The default Distance Unit is set to **Yd** (Yards). To Change to **M** (Meters), *press* your SET key once. To go back to Yd, *press* your SET key again. *Note:* Your choices are Yd or M only, but the reTrace™ Deluxe will adjust the units based on your distance from the POI and display them accordingly. For instance,

if the unit of measure is set to M and you travel past 1000 meters, the unit will automatically switch to Km (Kilometers). It will do the same with feet and miles.

e. Altitude Unit Setting
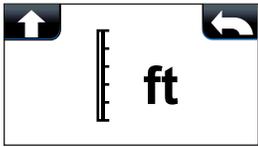
The default Altitude Unit is set to **Ft** (Feet). To Change to **M** (Meters), *press* your SET key once. To go back to **Ft**, *press* your SET key again.

f. Auto Off

The default Auto Off time is set for **5 Minutes**. You can set your reTrace™ Deluxe to turn off at 5, 10, 30 or 60 minutes as well as stay always "on". *Press* your SET key to toggle through the choices.

g. Backlight On Setting

The default value for Backlight is **"on"**. You can adjust the timer to 5, 10, 15 and 30 minutes. *Press* your SET key to toggle through the choices.

h. Altitude Benchmark Setting
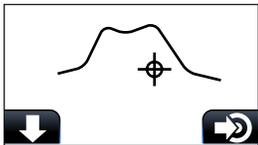
In order for your altitude reading to be accurate, you need to set the benchmark height. reTrace™ Deluxe offers two ways to do this. To pull up the choice window, *press* the SET key.

1. **Set altitude using GPS**: On the top of the screen is a satellite icon with a number. This is the GPS altitude. This is a fairly accurate reading of your height based on the GPS coordinates and the air pressure reading from the unit. To select this benchmark setting method, *press* the SET key.

2. **Manually set altitude**: To manually set the altitude benchmark, *press* the CHANGE SETTING key once to highlight the Manual setting (finger) icon. *Press* the POWER key to open the manual setting window. Using your SCROLL key or the CHANGE SETTINGS keys, enter the height you would like for your benchmark.
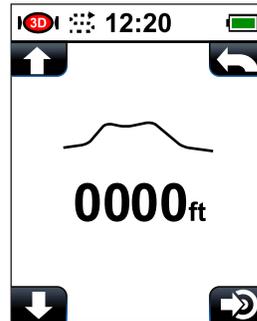

The most accurate way to set the benchmark is to be at sea level and enter 0000 for the height. If this is not possible, there are many online sources for acquiring your altitude benchmark. Once you acquire your local benchmark, you need to go to that spot and enter the altitude into your reTrace™ Deluxe.

i. Data Log Period Setting

The Data Log setting tells the reTrace™ Deluxe how often to record data. This is a powerful tool that collects info about your travels that can be saved and uploaded to the reTrace™ Deluxe software for analyzing. The default time for the Data Log Period is 5 seconds. *Press* your SET key to select and make changes. This window appears:
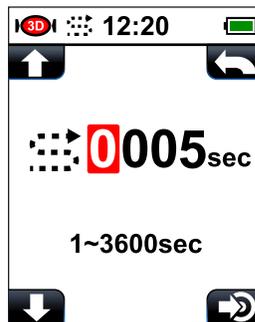
Press your SCROLL and CHANGE SETTINGS keys to change the digits to your desired number as described in previous instructions. When finished, *press* the POWER key once to return to the main screen.

j. Barometer Curve Record setting

To change the interval of barometric recording points, *press* your SET key and choose 5, 10, 30 or 60 minutes. The default setting for recording the barometer curve is 5 minutes.

VII. DATA MAPPING SOFTWARE

Your reTrace™ Deluxe works with special software to give you a robust online experience. Using the software, you can upload all of your POIs and data of all your recorded trails which are displayed on up-to-date Google® maps.

STEP 1. To download the software. Go to www.celestron.com and navigate to your product. Follow this path: New Products> reTraceDeluxe. This will take you to this screen:
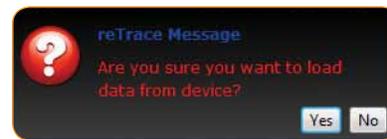

STEP 2. Once the software is downloaded, open the software on your PC. Next, using the included USB cord, connect your reTrace™ Deluxe to your PC. Make sure your device is turned on and click the "Connect" button.
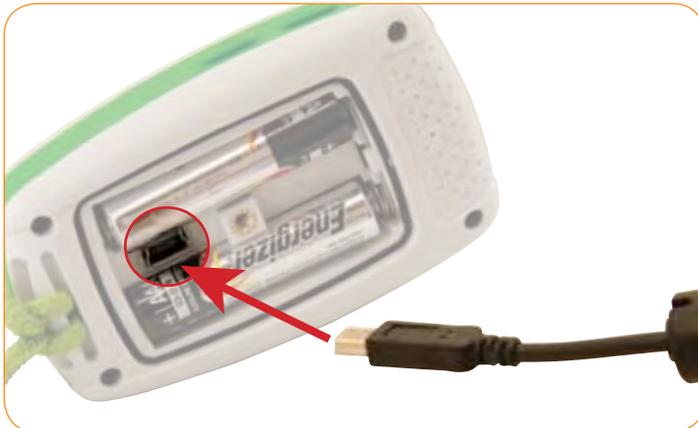
STEP 3. To load data from your reTrace™ Deluxe, click the "Load from device" button.

This prompt will appear. Select "yes".

Now all your information has been uploaded to the reTrace™ Deluxe software. Let's go through the 3 different features and tools the software offers.
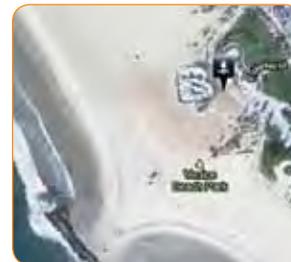
1. WAYPOINTS AND POIs SCREEN

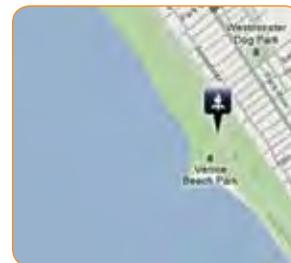Your POIs will now show up on the map. You may have to zoom in to see them.
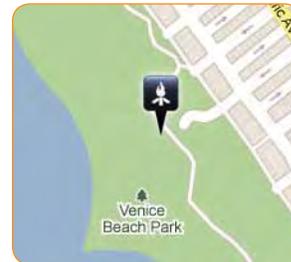
You can now see your saved POIs displayed over a Google® map. There are 3 map choices.

1. Map: A basic roadmap (shown above)
2. Satellite: An up-to-date satellite photo

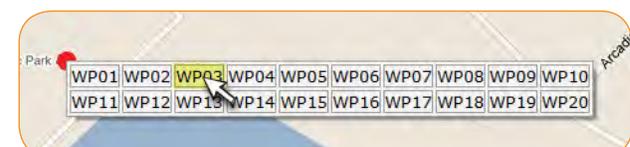3. Terrain: A geographical map with shading showing topographical details

You can also add Waypoints and save them to your device using the reTrace™ Deluxe software.

Here are two ways to do this:

1. Using the cursor:
   – Right click any location on the map with your cursor. This window will appear

Map data ©2011 Google

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– Select a Waypoint number for this location

– An icon will appear at this spot. To change the icon, right click on it and a window with all 27 icons will appear. Choose your new icon

– To save changes to your device, select "Send to device"
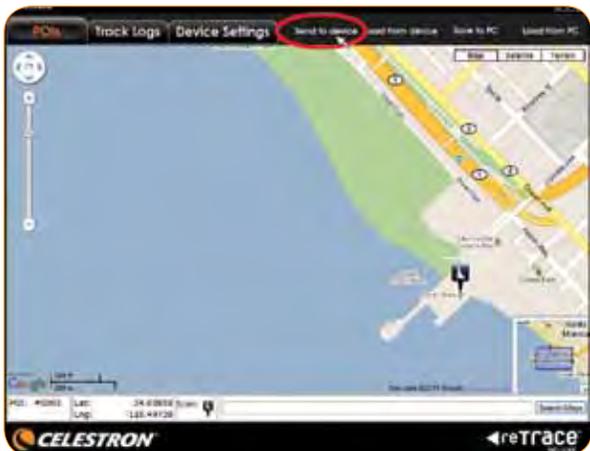
2. Using the search feature:

– At the bottom of the software window is a search box

– Type in a city, zip code, a complete address, a landmark or latitude and longitude coordinates and press "search". That location will appear with a POI icon associated with it. The more detail you provide, the more accurate the location will be. You can change the POI icon by right clicking and selecting a new one


2. TRACK LOGS

Clicking on the Track Logs tab will open a new window in the reTrace™ Deluxe software. This window displays a calendar (A), a small map (B), a window chart showing the altitude, temperature and air pressure (C), and animation controls for animating your track (D).


In the calendar, any data logs you have recorded will be highlighted in orange. To see the data, double click on the highlighted day and each log will appear under the calendar. If you double click one of the logs that appear, the information for that log will be displayed on the map and in the chart area.

On the map are two new icons, the green box is the start of your trail and the checkered box is the end. You will see your trail is shown in a dark blue line that connects the two icons. By clicking anywhere on the line the nearest data point will be displayed, showing index number, the date and time, and the latitude and longitude. There is also an option for adding a photo. To add a photo, click the "add photo" link. Browse your computer and select a photo. It will appear at that selected data point.
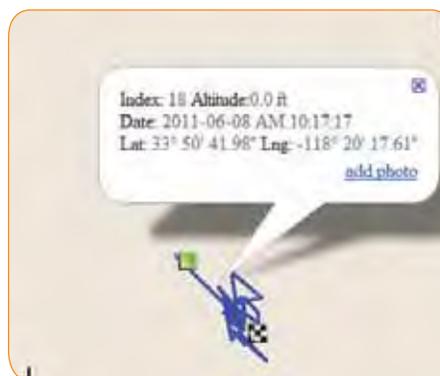

The reTrace™ Deluxe software comes with a "Play Back Your Track" feature. Select the play button and watch as a Celestron icon is animated, following your track. The controls allow you to fast forward, rewind, pause and stop as well.
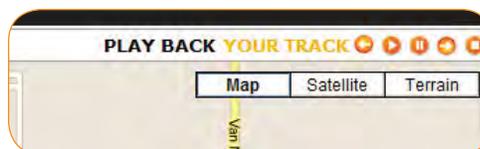
If you select the "Details" tab, the map screen will now change to a very detailed breakdown showing the date and time, latitude and longitude, altitude, air pressure and temperature for every data point recorded in this trail.

Map data ©2011 Google

Below the map and detail area is the chart area. Select a tab to choose your temperature, altitude and barometric pressure readings for the recorded trail.
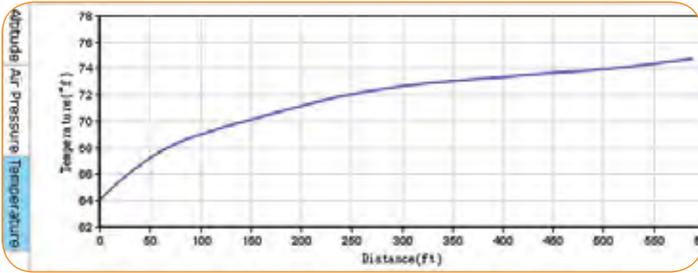
To save your Track Logs to your computer, click the button "Save to PC".

3. DEVICE SETTINGS

The reTrace™ Deluxe software allows you to change the settings for your device. First Click the Device Settings tab. This window will appear.

Here you will see that you can:

    A. Change the device settings
    B. Backup the Track Log
    C. Update your firmware

    A. Changing the device settings: It's as easy as selecting each of the choices available. They are:

- Distance Units
- Temperature Format
- Time Format
- Data Logging interval
- Set your GMT time zone
- Set your Power Off time
- Set The Backlight Off time
- Set the Altitude benchmark or Offset
- Set the time interval for the Barometric pressure reading

When you are satisfied with your changes, click the save button. The change takes place immediately.

    B. Backup your Track logs:

- Click the backup button and browse to a folder to back up

    C. Update your firmware:

- Occasionally new firmware will be released and available on our website
- Download the new firmware from the website and save it to a file on your computer
- Use this feature to browse to the folder and select the update

Please read the Google™ Maps Terms of Service at:
http://maps.google.com/intl/en/help/terms maps.html

WARNINGS AND NOTICES

GPS SYSTEMS AND LOCATION ACCURACY NOTICE

The Global Positioning System (GPS) is operated by the government of the United States of America, which is solely responsible for its accuracy and maintenance. The system is subject to changes which could affect the accuracy and performance of all GPS equipment. The inherent nature of the GPS system itself limits the accuracy of the distance indicated on the reTrace Deluxe display to within roughly +/- 3 to 5 meters (or yards) of the actual marked location.

WARNING

This device is intended as a supplemental handheld navigation aide only. The user assumes all responsibility associated with the use of this product. It must not be used for any purpose requiring precise measurement of location, direction, distance, velocity, or typography. This device should not be used for any aircraft navigation applications.

VEHICULAR USE NOTICE

Celestron is committed to the safe and responsible enjoyment of the outdoors. Do not use this product while driving. An accident can result in property damage, injury, or death if the operator fails to practice prudent driving practices. It is the sole responsibility of the driver of any vehicle to operate the motor vehicle in a safe manner. Information from the GPS unit can distract the operator of a motor vehicle. It is unsafe to operate the controls of the GPS

unit while operating a motor vehicle. If used in a motor vehicle, it must not be used by the operator of the motor vehicle. If it is used in a motor vehicle, it must be mounted in a manner such that it does not distract the operator, does not interfere with the operator's field of view, and does not block or interfere with the air bags or other safety mechanisms of the motor vehicle. Windshields and car windows with integrated metallic materials, such as defrosters, or car window tinting films, can degrade the GPS reception inside a car.

LIABILITY NOTICE

In no event shall Celestron be liable for any incidental, special, indirect or consequential damages, whether resulting from the use, misuse, or inability to use this product or from the defects in the product. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you.

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www.celestron.com

Your Celestron reTrace has a Two Year Limited Warranty.

For detailed warranty information and to register your new product, please visit our website: www.celestron.com

Designed and intended for those 13 years of age and older.

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