

DO YOU KNOW WHERE YOUR FIELD CREW HAS BEEN? USING FULL-SPECTRUM GPS TO TRACK, COORDINATE AND ASSESS

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A fossil is only useful when combined with accurate geographic and stratigraphic data. The Global Positioning System, a constellation of 21 satellites accessible through handheld receivers, is extremely useful for determining and recording geographic information. Often used by paleontologists only to record locality data, the latest low cost units have made possible numerous other applications.

The past four seasons, the Field Museum's Fossil Frontier Expedition has tested a variety of techniques for using these units to improve the efficiency and scientific accuracy of expeditions. Four of these techniques have proven especially effective:

1. GPS units are set to track each member's location every few minutes. These routes are downloaded into a computer at the end of each day. Areas covered (and missed) by the team are determined.
2. All bone fragments are recorded using the GPS quick record function. These points are overlaid on a topo map to determine distributional patterns.
3. For important finds, the GPS unit, displaying the waypoint name and coordinates, is placed next to the specimen along with a scale target and north arrow; an electronic time-stamped photograph is taken, integrating all vital data into a single, consistent format to be downloaded into a computer database.
4. A vehicle-mounted computerized GPS mapping system (including "two-tracks") is used to facilitate finding and returning to field sites.

All of these techniques are within the budgets of most expeditions and will soon become a standard part of field data collection.