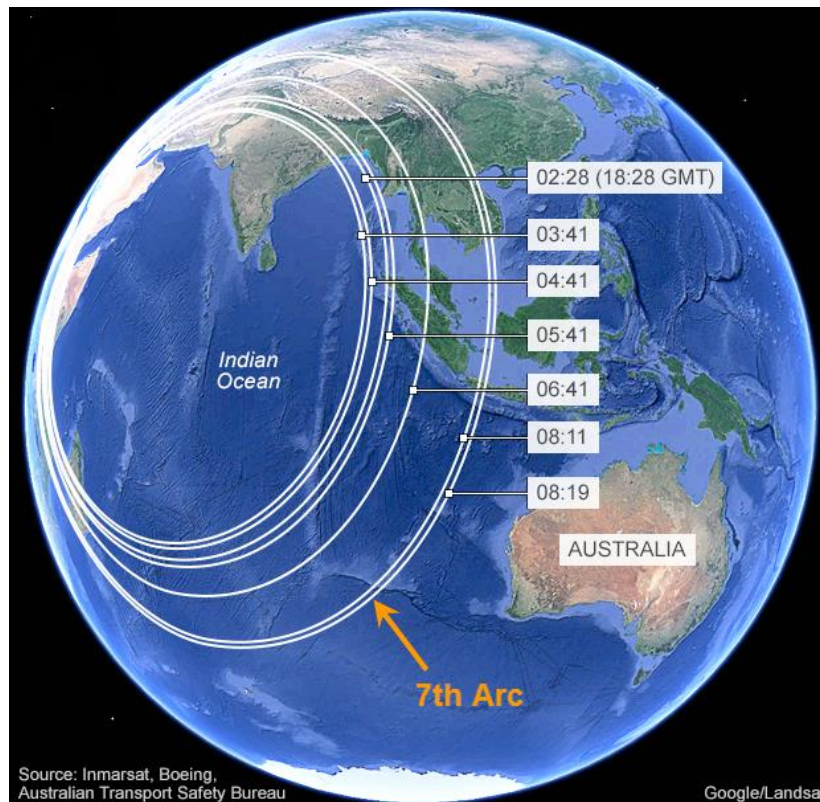


### Customer Spotlight: Geoff Bogie, Alice Springs Resources, NT, Australia

Golden Software customers possess a broad assortment of backgrounds from earth science and engineering to education and politics. This vast background results in a variety of uses for Golden Software's products. Each customer uses the software in a unique way, and we are pleased to share these stories. This newsletter features Geoff Bogie, of Alice Springs Resources, NT, Australia, who used MapViewer 7 to propose a new search site for missing Malaysian Flight MH370 after finding variables within a seabed area that formulate an anomaly zone.

*Saturday March 8, 12:41AM, Kuala Lumpur, Malaysia* - Malaysia Airlines flight MH370 departs on schedule for a flight to Beijing. At 1:19 they make contact with air-traffic control. Everything seems normal. That is the last contact they will make. At 2:15 military radar loses track of them, having made a sharp turn to the west instead of following their designed trajectory north, and at 8:11 a final satellite communication puts the plane somewhere due west of Australia on what is now being called the '7<sup>th</sup> Arc'. Thousands upon thousands of square miles of ocean have been searched, but nothing has been found. Theories abound that someone took control of the plane 1 hour into the flight and that the plane was on autopilot when it crashed, but the only thing that is known for sure is that 239 passengers and crew vanished that day.



*Satellite communications with MH370 puts the plane along these arcs at the given times. The 7<sup>th</sup> arc, determined by the satellite communications firm Inmarsat, marks the last 'known' location. Image modified from: <http://www.bbc.com/news/world-asia-26503141>.*

*Saturday March 8, Alice Springs, NT, Australia* - That same morning, Geoff Bogie of Alice Springs in Central Australia woke, poured himself a cup of coffee, and turned on the news. "That a 270 ton plane had vanished into thin air was surely a mistake," he remembers thinking. Geoff, felt he was in a unique position

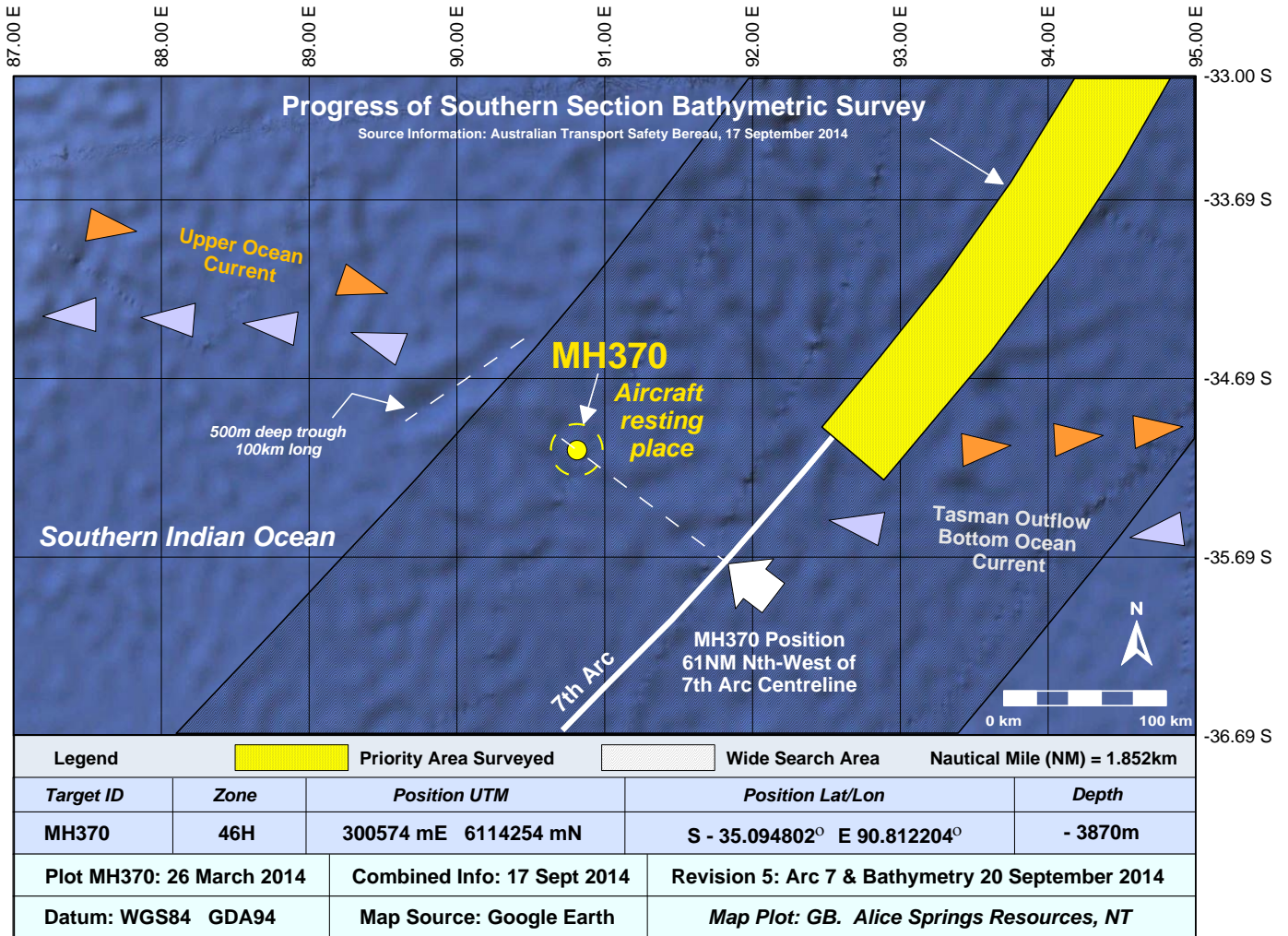
to help. As a mineral explorer and mining contractor, he has 30 years of experience in plotting target position maps down to 1 meter accuracy. "The urgency and personal input of helping to solve this mysterious puzzle got me motivated," he recalls. "I plotted the MH370 target site in the same way as I would plot mineral targets across ground that I have not physically placed a foot upon." He felt that in order to find this aircraft, he would need to do three things: 1) abandon the large search area and instead come up with a 1-meter accuracy point position, 2) remain unbiased by theories on how the aircraft had come to be in the Southern Ocean area, and 3) keep in mind the arcs and projected flight path that the Inmarsat satellite company engineers plotted and tested.

He decided to start by combing Google Earth ... but where to start looking? As several countries joined the search, scouring the South China Sea for any sign of wreckage, Geoff's thoughts put the missing plane closer to his home, some 2,000 kilometers W-SW of Perth, Australia. His feelings were later confirmed when the search shifted to Inmarsat's 7<sup>th</sup> Arc bandwidth, though investigators only covered a few kilometers east and west of the centerline on the southern section of the arc. From researching oceanic currents, Geoff felt that the wreckage was farther off the arc centerline.

In defining a zone, and subsequent plot point, he ended up concentrating on the Tasman Outflow (blue arrows in the figure below), which is a westbound bottom-ocean current 'supergyre' that sweeps past Tasmania and links the Indian, Pacific and Atlantic Southern Ocean basins. As the Tasman Outflow extends westerly across the Southern Ocean, a new heading to the south, below Madagascar is taken, out from South Africa's east coast. Tracking south, the current meets with eastbound waters rounding the Cape of Good Hope, combining as Sub-Antarctic Circumpolar Current.

Geoff sat down in front of his go-to program, MapViewer 7, and began mapping out these ocean currents on a base map from Google Earth. At that point, he noticed a NE-SW trending, 100 kilometer long trough with prominent ridge, where a succession of seafloor hills taper down by some 280 meters elevation across a 90 kilometer length zone heading E-SE. Somewhere near  $-35.09^{\circ}$  S,  $90.80^{\circ}$  E, the west flowing Tasman Outflow current changes heading to W-NW by virtue of the landform acting as a steering device. This unique location, 61 nautical miles northwest of the 7<sup>th</sup> arc bandwidth centerline, is where Geoff proposes the MH370 resting place. Objects finding their way to a narrow horizon interval below the bottom-ocean current, within this zone, thereafter remain obscured at 3,900 meters below on the seabed floor.

# Missing MH370 Plane - Proposed Target Area



Taking into account geology and topography of the ocean floor, along with hydrography, Geoff Bogie proposes the final resting place of Malaysian flight MH370 within an area which has gone unsearched.

This map of that final resting place was created when Geoff imported a Google Earth image into MapViewer 7 and overlaid a graticule to give the image a georeferenced location that he then used to plot the 7<sup>th</sup> arc and his proposed target location.

On May 8, Geoff submitted a first draft of his results paper, titled [Review of missing Malaysian Flight MH370](#), to the Joint Agency Co-Ordination Centre (JACC) – the agency created to be the Australian point-of-contact for the public and all those affected by missing flight MH-370. On July 9 he submitted a revised draft. Other than a confirmation email, to his knowledge nothing has directly been done with his findings, but recently airline pilots and professionals familiar with the design of these passenger aircrafts have made public comments offering support for a Southern Ocean resting place. They also support an ‘intact and gradual’ sinking theory (which Geoff postulated early on) which would explain why no wreckage has been found. Though it would appear that few contributors ventured as far as Geoff has in proposing a niche ocean anomaly zone whereby ‘thermohaline circulation’ or a ‘global current conveyor belt’ has an influence as to what remains undetected on the seafloor of this unique extraordinary zone, Geoff remains confident in his map.

To date the missing Malaysia flight MH370 plane has not been found, but Geoff remains optimistic that his map and the effort that he and countless others expounded will help bring closure to the families of those lost that day.

For more information, see:

[Ocean 'supergyre' link to climate regulator](#)

[Australia discovers ocean current "missing link"](#)