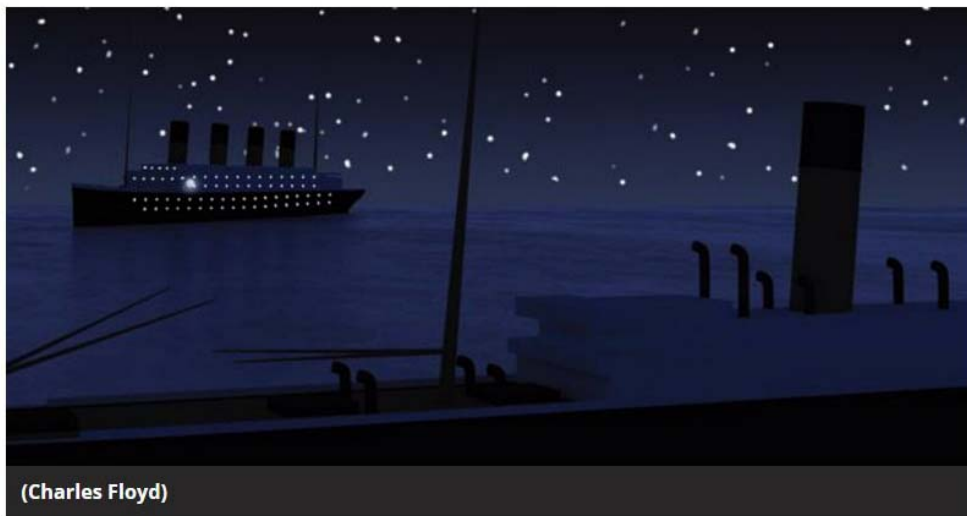


New research may have found the reason why the ship struck an iceberg: light refraction



(Charles Floyd)

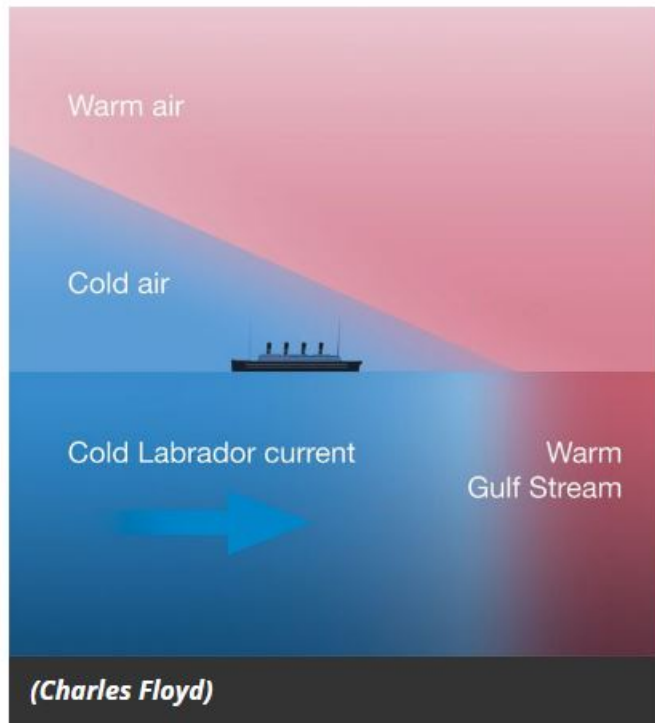
MARCH 1, 2012



An unusual optical phenomenon explains why the *Titanic* struck an iceberg and received no assistance from a nearby ship, according to new research by British historian Tim Maltin. Atmospheric conditions in the area that night were ripe for super refraction, Maltin found. This extraordinary bending of light causes miraging, which, he discovered, was recorded by several ships in the area. He says it also prevented the *Titanic's* lookouts from seeing the iceberg in time and the freighter *Californian* from identifying the ocean liner and communicating with it. A 1992 British government investigation suggested that super refraction may have played a role in the disaster, but that possibility went unexplored until Maltin mined weather records, survivors' testimony and long-forgotten ships' logs. His findings—presented in his new book, *A Very Deceiving Night*, and the documentary film *Titanic's Final Mystery*, premiering on the Smithsonian Channel at 8 p.m. on April 15—are distilled here:

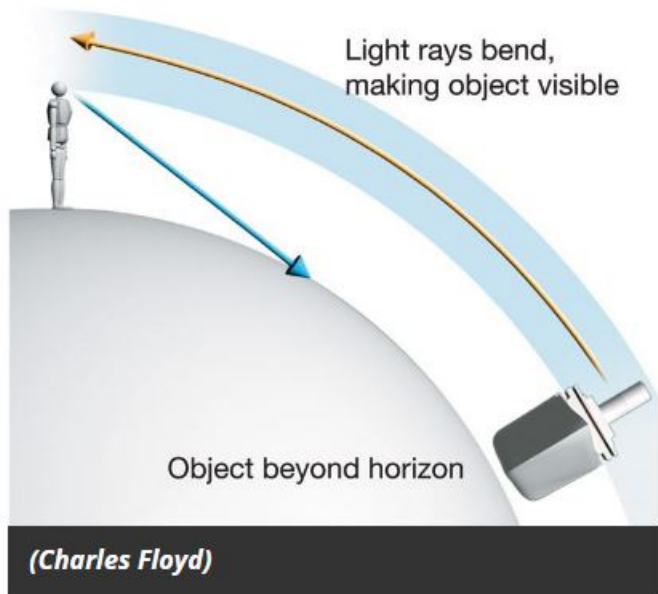
1. Thermal Inversion

The *Titanic* was sailing from Gulf Stream waters into the frigid Labrador Current, where the air column was cooling from the bottom up, creating a **thermal inversion**: layers of cold air below layers of warmer air. Extraordinarily high air pressure kept the air free of fog.



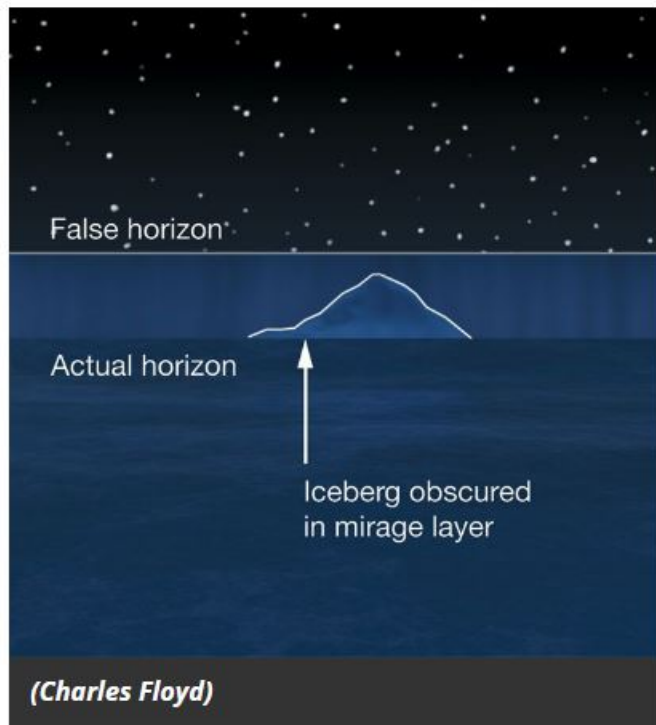
2. Superior Mirage

A thermal inversion refracts light abnormally and can create a **superior mirage**: Objects appear higher (and therefore nearer) than they actually are, before a false horizon. The area between the false horizon and the true one may appear as haze.



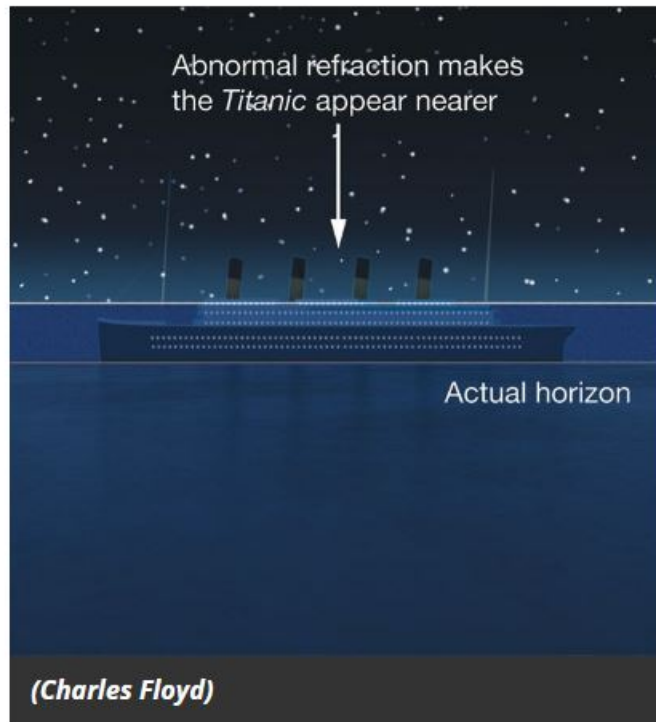
3. Iceberg Camouflage

The *Californian's* radio operator warned the *Titanic* of ice. But the moonless night provided little contrast, and a calm sea masked the line between the true and false horizons, **camouflaging the iceberg**. A *Titanic* lookout sounded the alarm when the berg was about a mile away—too late.



4. Mistaken Identity

Shortly before the collision, the *Titanic* sailed into the *Californian*'s view—but it **appeared too near and small** to be the great ocean liner. *Californian* captain Stanley Lord knew the *Titanic* was the only other ship in the area with a radio, and so concluded this ship did not have one.



5. Morse Lamp

Lord said he repeatedly had someone **signal the ship by Morse lamp** “and she did not take the slightest notice of it.” The *Titanic*, now in trouble, signaled the *Californian* by Morse lamp, also to no avail. The abnormally stratified air was distorting and disrupting the signals.



6. Distress Rockets Ignored

The *Titanic* **fired distress rockets some 600 feet into the air**—but they appeared to be much lower relative to the ship. Those aboard the *Californian*, unsure of what they saw, ignored the signals. When the *Titanic* sank, at 2:20 a.m. April 15, they thought the ship might be simply sailing away.

