

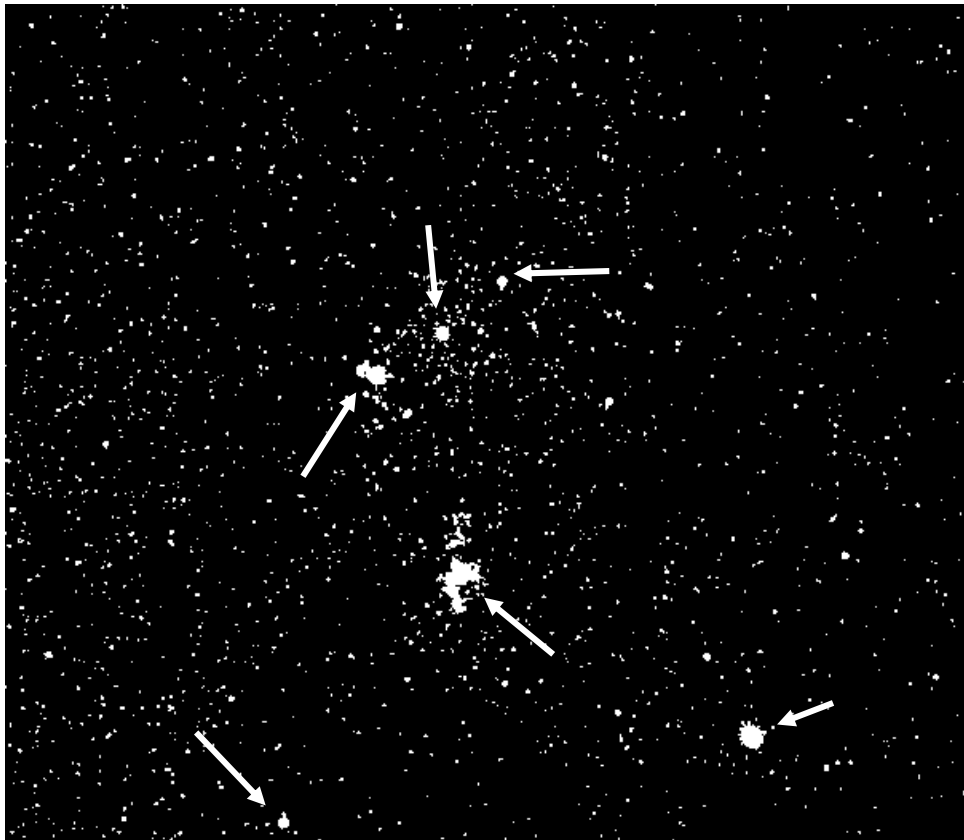


Clyde Tombaugh Discovers Pluto in 1930

“Looking For a Needle in a Haystack”

The planet Pluto is so small, and so far away from the Earth, it is impossible to see with the naked eye. In 1930, even the best eyes, using the best telescopes, could not detect the little bit of sunlight reflecting from the surface of the yet-to-be discovered ninth planet. In the later part of the 19th century, the newly invented technology of cameras and photographic plates (film) was replacing the human eye at the objective end of the telescope. Using the telescope as a camera and pointing it toward the heavens, and exposing the photographic plate over several seconds (or even minutes), revealed a spectacular universe filled with tiny points of light never before seen by the human eye.

Such a time-lapse photograph is shown below. The brightest stars, indicated with arrows, form the familiar constellation known as “Orion.” Our eyes easily see the stars forming Orion, but it takes a time-lapse photograph to reveal the thousand of tiny points of light that are too small or too far away for our eyes to detect. Could one of these stars possibly be Pluto, or even some other planet that has yet to be discovered? If Pluto were in this photograph, it certainly would be like “looking for a needle in a haystack!”



American astronomer Clyde Tombaugh discovered Pluto in 1930 in the time-lapse photograph shown here.

Can you guess which point of light is Pluto?
Of course you can't!

A point of light in such a photograph could be a star or a planet. Stars do not appear to move relative to one another and seem to be fixed in constant patterns that form the constellations. Planets, or “wandering stars” to the early Greeks, slowly move through the fixed patterns of stars (as do comets and asteroids). Tombaugh took a second photograph of the same area of the sky as shown to the right a few months later. He knew that if a “wandering” planet were in this area of the sky, it would appear to be in two different places in each photograph. But there were too many points of light, and some were so faint, it might not be easy to detect the changing position of a faint planet. The problem was solved using a device known as a “blink comparator.”

