

THE GLAUCOMA TENSION



The rate at which the universe is expanding is faster than what theory predicts. Astronomers have dubbed this puzzling discrepancy *Hubble tension*.

Decades ago, scientists assumed that the measured rate of the universe's expansion was wrong, because the theoretical predictions seemed too robust. However, after more than 30 years of measurements and the addition of the James Webb telescope studying Cepheid variables (pulsating stars whose variations in luminosity help to measure cosmic distances), it has been confirmed that we are missing something fundamental in physics.

The leading theory is that this difference in theory versus observation may be due to something that is not directly detectable. The fact that substance such as dark matter or dark energy may exist—something that does not interact with light but still interacts with gravity and something that we cannot yet measure—is humbling.

Glaucoma is also a puzzle, and the mental strain associated with the disease is felt by patients, providers, and researchers—hence why we feel tension in all aspects, from defining to diagnosing to treating the condition. There is even tension in what intraocular tension we need to achieve to prevent blindness.

We shouldn't be too surprised that we have yet to identify all the factors that lead to glaucomatous progression. While our predictions for whether the disease will progress in some populations have improved (eg, OHTS), there is still a disconnect between predicted and actual disease progression in many patients, especially those with near-normal IOPs.

There is no known standard candle, or Cepheid variable. There is no billion-dollar detector or particle accelerator. But there are advances being made in our field that may shed light on disease diagnosis, stratification, and signs of ganglion cell strain. We hope that you enjoy reading about how some of our colleagues are working to relax the tension we all feel about this blinding disease. ■

A stylized, handwritten signature in dark ink, appearing to read 'Arsham Sheybani'.

ARSHAM SHEYBANI, MD

CHIEF MEDICAL EDITOR