In a galaxy far, far away

By Blake Mathews

While plenty of students have their eyes on the prize at the end of Club Week, my gaze is aimed a bit higher. I’m talking about the stars in the sky, what C.S. Lewis called “Deep Heaven.”

The hundreds of billions of suns and solar systems beyond our own are a frontier we only have a skeletal understanding of; our imaginations have had to put meat on the bones. But the distant worlds of science fiction are slowly appearing in the world of scientific fact. Astronomers are making huge strides in the study of these “exoplanets,” and yes, you should be just as excited as I am.

When I say “HARPS,” some of you may think about groceries. What the team at La Silla Paranal Observatory in Chile thinks about is the High Accuracy Radial velocity Planet Searcher. HARPS is special spectrometer able to find planets orbiting distant stars. Scientists watch for signs of the star’s “wobble,” or the super slight pulling effect that orbiting planets have on their suns. When planets pass, or “transit,” in front of their suns, it yields amazing data. Just by looking at the colors of the light that passes through the exoplanets, we can now tell what chemicals are in their atmospheres.

NASA is also hunting for exoplanets through its space-based Kepler telescope. Lately the Kepler mission has been studying a “hot Jupiter,” a gas giant planet orbiting very close to its sun. Just by watching incremental changes in light as the planet transits past its star, NASA calculated the hot Jupiter’s daytime atmospheric temperature. They say it’s 4,310 degrees Fahrenheit, but when the planet is literally 1,000 light years away, who’s going to argue with them?

On Monday the HARPS team announced that 32 new exoplanets had been found, including several solid, rocky ones. But in all this data on new mystery worlds, what are we looking for?

“The holy grail of current exoplanet research is the detection of a rocky, Earth-like planet in the ‘habitable zone’ — a region around the host star with the right conditions for water to be liquid on a planet’s surface,” planet hunter Michel Mayor said.

Are we combing through the distant skies looking for new Earths? Just thinking about it makes you wonder what, on a distant planet made with Earth’s blessed traits, will be so unearthly that it blows our minds? Sadly, our wildest dreams don’t change the fact that we’ll never reach those new Earths in our lifetimes.

But discovering the universe one planet at a time has an important benefit to us now: it lets us dream. It stretches our perspective across the galaxy and challenges us to realize that everything we’ve ever known is growing out of one rocky ball orbiting a medium-sized star. Rather than swap our imaginings for data, we can find new lands for our fantasies to stand on. And it’s something everybody on Earth has in common, this wild, impossible frontier. Every step into it, we take together.

Not everyone feels this way. There are plenty who feel that every dollar spent on the stars could be better spent planetside. NASA currently operates off less than one percent of the federal budget, and next year they’re slated to get .52 percent. President Obama is pledging more money for human spaceflight programs, but what we really need is a change in national attitude. Space was once an American priority; it was our collective dream. A summer day in 1969 may have been the last time we all looked at the sky as brothers and sisters, but I still believe in giant leaps for mankind.