

# Bringing home the universe Tro

GR native returns with National Geographic book on impressive scale

**WEST MICHIGAN SKIES**

BY DAVID L. DEBRUYN  
SPECIAL TO THE PRESS

It is something we all have trouble with, even those of us who have long specialized in studying and interpreting astronomy concepts: How do we get our heads around the incredible dimensions and distances of celestial objects?

A Grand Rapids native who is now a professor at Princeton University has created a wonderful opportunity for the armchair astronomer to better visualize celestial concepts as a contributing photographer and co-author of the National Geographic book "Sizing Up the Universe."

Robert Vanderbei will show pictures and illustrate concepts from the book, followed by signing, on Wednesday at Schuler Books and Music on 28th Street SE. Vanderbei is chairman of the department of Operations Research and Financial Engineering at Princeton, with courtesy appointments in the mathematics and astrophysics departments, among others.

The book seeks to place the cosmos in perspective through creative diagrams and colorful images selected to show its scale, from the size of Earth compared to the sun, to our home star's insignificance within the spiral arms of the giant Milky Way.

While some images are drawn from NASA planetary probes, the Hubble Space Telescope and archives of professional observatories, others were taken by Vanderbei through a modest telescope set up outside his home near Princeton.

Vanderbei's interest in astronomy was sparked as a teenager back in the late '60s. He joined the Grand Rapids Amateur Astronomical Association and was in weekend work crews



COURTESY PHOTO

**Rekindled interest:** Robert Vanderbei takes superb celestial photos from his backyard telescope.

**IF YOU GO**

**'Sizing Up the Universe'**

**What:** Illustrated presentation and book signing by co-author Robert Vanderbei

**When:** 7 p.m. Wednesday, Schuler Books and Music, 2660 28th St. SE

**Admission:** Free

**James C. Veen Observatory**

**Visitor Nights,** Saturday, July 16, and Saturday, July 30, 9:30 p.m. to midnight, sky conditions permitting at 3308 Kissing Rock Ave., Lowell Township.

that assisted with construction of the Association's James C. Veen Observatory near Lowell. His interest in astronomy as a hobby rekindled in 1998, and he has since become skilled at digital imaging of celestial objects.

In "Sizing Up the Universe," Vanderbei's backyard photo of the "pillars of creation," dark finger-like silhouettes within the Eagle Nebula, compare favorably with the well known one captured by Hubble.

We learn how some space objects can be deceptive. The moon looks large in the sky, but only because it is our closest neighbor at 240,000 miles. Comparative photos reveal that the Andromeda Galaxy, closest large galaxy to the Milky Way, appears larger than the moon when enough light is accumulated to reveal its full extent. But the galaxy lies an astounding 2.5 million light years distant, so the moon must be extraordinarily insignificant by comparison.

An informative photo taken by Vanderbei of a rare transit of the planet Venus across the face of the sun in 2004 shows how tiny that planet is against the brilliant solar disk.

Most revealing is the book's final chapter, titled "To Infinity and Beyond." The authors carry the readers along, using multiples of 10, from the very small to extraordinarily large. They cleverly begin with Buzz Aldrin's 20-inch-long footprint on the moon, shown actual size, and work outward through representative objects of ever greater size and distance. It is an extraordinary exercise in thinking on the grandest possible scale.

David L. DeBruyn is curator emeritus of the Roger B. Chaffee Planetarium of the Grand Rapids Public Museum.

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