

Galactic Gazette



A Newsletter of the Kiski Astronomers

Most Distant Naked Eye Object Detected

Editor: Dr. Tony Phillips

March 21, 2008: A powerful gamma ray burst detected March 19th by NASA's Swift satellite has shattered the record for the most distant object that could be seen with the naked eye.

"It was a whopper," says Swift principal investigator Neil Gehrels of NASA's Goddard Space Flight Center. "This blows away every gamma ray burst we've seen so far."

Swift's Burst Alert Telescope picked up the burst at 2:12 a.m. EDT on March 19, 2008, and pinpointed the coordinates in the constellation Bootes. Telescopes in space and on the ground quickly moved to observe the afterglow. The burst was named GRB 080319B and registered between 5 and 6 on the visual magnitude scale used by astronomers.

Later that evening, the Very Large Telescope in Chile and the Hobby-Eberly Telescope in Texas measured the burst's redshift at 0.94. A redshift of 0.94 translates



March 19, the gamma ray burst GRB 080319B was observed. What is so special about this one is that it has been determined to have happened at a distance of 7.5 billion light years, and yet its optical afterglow was briefly visible with the naked eye!

Credit: Science@NASA

into a distance of 7.5 billion light years, meaning the explosion took place 7.5 billion years ago, a time when the universe was less than half its current age and Earth had yet to form. This is more than halfway across the visible universe.

"No other known object or type of explosion could be seen by the naked eye at

such an immense distance," says Swift science team member Stephen Holland of Goddard. "If someone just happened to be looking at the right place at the right time, they saw the most distant object ever seen by human eyes without optical aid."

Most gamma ray bursts occur when massive stars run out of nuclear fuel. Their cores collapse to form black holes or neutron stars, releasing an intense burst of high-energy gamma rays and ejecting particle jets that rip through space at nearly the speed of light. When the jets plow into surrounding interstellar clouds, they heat the gas to incandescent visibility. It is this gaseous "afterglow" which was visible to the human eye on March 19th.

GRB 080319B's afterglow was 2.5 million times more luminous than the most luminous supernova ever recorded, making it the most intrinsically bright object ever observed by humans in the universe. The most distant previous object that could have been seen by the naked eye is the nearby galaxy M33, a relatively short 2.9 million light-years from Earth.

Analysis of GRB 080319B is just getting underway, so astronomers don't know why this burst and its afterglow were so bright. One possibility is the burst was more energetic than others, perhaps because of the mass, spin, or magnetic field of the progenitor star or its jet. Or perhaps it concentrated its energy in a narrow jet that was aimed directly at Earth.

GRB 080319B was one of four bursts that Swift detected on March 19th, a Swift record for one day. Swift science team member Judith Racusin of Penn State University comments, "coincidentally, the passing of Arthur C. Clarke seems to have set the universe ablaze with gamma ray bursts." A fitting farewell, indeed.

The Next Meeting of the Kiski Astronomers



will be Thursday, April 3rd, 2008 at 7 PM at
Kiski High School in the LGI Room.

John Labrecque will show a video on the
Spitzer Space Telescope for the evenings
program.

Refreshments for the evening:

Snacks: Ed Kuzemchack

Drinks: Bob Kalan

See you there!

Travels on the Celestial Sphere

Galaxies in Canes Venatici

Glen Sanner and George Robert Kepple

Photos from Digital Sky Survey

This month we continue our quest for spring galaxies in the constellation Canes Venatici, the Hunting Dogs. The dogs, Asterion and Chara, are held on a leash by Bootes, the Herdsman, were named by Hevelius in the 17th century. When looking toward Canes Venatici we peer through three layers of galaxy groups. The first is the Canes Venatici I Cloud - at 20 million light years, the second is the Canes Venatici II Cloud - at 30 to 40 million light years, and the third is the Ursa Major I Cloud - at 70 to 80 million light years. M94 (NGC 4736) and NGC 4244, are the closest among those we will describe.

NGC 4151, Type (R')SAB(rs)ab:, Dia. 6.4' x 5.5', Mag. 10.8v, SB 14.5, 12h10.5m +39°24'

This type I Seyfert galaxy is a fairly bright face-on galaxy with a surrounding halo elongated 3' x 1.75' NW-SE. There are a few 12th and 13th magnitudes stars touching the halo. NGC 4156 is 5.5' NE of 4151. NGC 4151 is a little over 50 million light years distant.

NGC 4217, Type Sb, Dia. 5' x 1.5', Mag.11.2v, SB 13.2, 12h15.8 +47°06'

This galaxy is nestled among three stars making it somewhat more difficult to see, however, with a little patience, enough aperture and averted vision you will be pleased to see its faint dust lane along its SE edge. The halo stretches 4.5' x 1' NE-SW with a brighter nucleus at center.

NGC 4244, Type SA(s)cd:sp IV, Dia. 17' x 2.2', Mag. 10.4v, SB 14.2, 12h17.5m +37°49'

This is one of those amazing edge-on galaxies similar to those we spoke of in last month's newsletter. It is a long, thin spindle spanning 15' to 17' NE-SW. With enough aperture some faint knots may be seen

on both sides of its extended core. It lies at a distance of 6.5 million light years and thus is somewhat closer than other galaxies.

M106 (NGC 4258), Type SAB(s)bc II-III, Dia. 20' x

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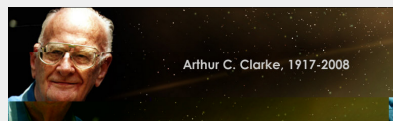
Nocturnal Notables

April 2008



- April 2 Pluto stationary
- April 5 ☉ New Moon 11:55 P.M.
- April 7 Moon at perigee
- April 12 ☽ First Quarter Moon 2:32 P.M.
- April 18 Juno stationary
- April 20 ● Full Moon 6:25 A.M.
- April 23 Moon at apogee
- April 28 ☾ Last Quarter Moon 10:12 A.M.
- May 3 Saturn stationary
- May 5 ☉ New Moon 8:18 A.M.
- May 5 Moon at perigee
- May 9 Jupiter stationary
- May 11 ☽ First Quarter Moon 11:47 P.M.

A cosmic salute to Arthur C. Clarke



Arthur C. Clarke, 1917-2008

Sadly, Arthur C. Clarke passed away on March 19, 2008 after a brief illness.

Ironically, within hours of his death, a massive gamma ray burst from GRB 080319B was detected and by far the most luminous ever recorded. It was even briefly visible to the naked eye despite having traveled 7.5 billion light-years.

Besides his science fiction writings, he also wrote a number of non-fiction books describing the technical details and societal implications of rocketry and space flight. The most notable of these may be *The Exploration of Space* and *The Promise of Space*.

One of his most important contributions was his ideas on using satellites for telecommunications relays. The concept was published in *Wireless World* in October 1945.

Clark also sought for the truth behind Star of Bethlehem, surely prompted by his Atheist beliefs. He once mused on TV that the Star of Bethlehem had in fact been a supernova, now known as pulsar PSR 1913+16B. He added: "*How romantic, if even now, we can hear the dying voice of a star which heralded the Christian era.*"

Clark wanted to be remembered most as a writer, one who entertained readers, and, hopefully, stretched their imagination as well.

I don't think Sir Arthur C. Clarke could have thought of a more fitting salute, having an exquisitely timed cosmic event to commemorate his diverse life!



The Galactic Gazette

is published & edited by
Denny Hill

Contributions to the newsletter are greatly appreciated!
Please consider sharing your knowledge and experiences along with any expertise with me for future issues!

This is your newsletter! Make it the best it can be!
Email your articles to me at dhill955@atttel.net

Thanks!

Kiski Minutes

The Kiski Astronomers met at 7pm at Kiski High School in the LGI room.

John Labrecque and Denny Hill showed pictures of the February lunar eclipse for the evening's program.

Snacks for the evening were provided by Larry Kort and drinks by Bob Kalan.

The business was called to order at 8:09 pm by President John Labrecque

Reading of January's minutes were read and approved as read.

Treasurers report:

Opening balance: \$1041.12. Closing balance \$1063.12.

Ed reported that Ray Montgomery and Larry Peters have not renewed their membership.

Old Business:

Denny Hill reported that this month's meeting was posted in the Stroller.

Larry McHenry updated the website with the addition of the list of the public star party and also the club newsletters.

The web address for the club website

March 8, 2008 Minutes

can now be considered official.

Ed had no information about incorporating yet.

Observations:

Bob Kalan had first light on his Williams Optics 132 ED Refractor with a look at the Orion Nebula.

Larry McHenry reported small sunspots along the sun's equator.

John Labrecque viewed Saturn and Mars on the night of the eclipse.

New business:

Club will hold its summer picnic on August 9th at Kunkle Park before the public star party.

By-laws were reviewed and updated.


April's program will be a DVD on the Spitzer Space Telescope by John Labrecque.

Snacks and drinks for April's meeting.

Drinks – Bob Kalan (volunteered for the rest of the year)

Snacks – Ed Kuzemchak

Meeting was adjourned at 9:27pm



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Galactic Humor!

Submitted by Denny Hill

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