

Beteleguese

Monthly newsletter of the East Oxford Astronomy Club
Issue 1: February 2026.



from *Universe Today*

Natty Mark Samuels

Editorial

In this, the first issue of Beleguese, monthly newsletter of the East Oxford Astronomy Club, based at The Leys College, in Blackbird Leys, alongside the spotlight on space agriculture with the short piece entitled, **Sunflower**, as Muslims begin Ramadan, I celebrate the historical Islamic contributions to astronomy, through **Trigonometry Chant**; focusing on two figures from the ages of gold.

By the way, Betelgeuse is one of the brightest stars in the sky, resident in constellation Orion. It's a red super giant, about ten million years old.

So, using short pieces of prose, poems – or a mixing of both - dialogues, chants and whatever I think will engage the community, I hope to make astronomy accessible and enjoyable to as many as possible, aged twelve and above.

Continuing from the first paragraph, between the 8th and 13th centuries are known as the Golden Age of Islam, when Islamic scholars were trailblazers in certain fields, such as astronomy, mathematics and medicine. The House of Wisdom, founded in 9th century Baghdad, was an intellectual powerhouse, attracting scholars and students from across the world. Books were translated from Sanskrit, Persian and Greek into Arabic. Muhammad ibn Musa al-Khwarizmi, an Iranian polymath, mentioned in the aforementioned chant, was a leading figure there.

Africans also, made their contribution to this lauded era. One such figure is the 10th century Egyptian Ibn Yunis. In recognition of his observations and writings, there is a crater named after him on the Moon. The 13th century Moroccan astronomer Hasan al-Marrukushi, also has a lunar crater named after him.

The other African figure mentioned in the chant, is Mohammed Bagayogo, favourite teacher of Ahmed Baba, the most famous scholar associated with Timbuktu University, during its Golden Age in the 16th century. Returning from Mecca, Bagayogo, was given a doctorate by Al Azhar University in Cairo, Egypt.

Pat Thomas, from East Oxford, is an internationally acclaimed jazz musician, classically trained on piano. His Islamic faith imbues his creativity. Even if you're not a fan of jazz and improvisation, I suggest you listen to '*The Birds Are Singing*', from his latest release, **The Solar Model of Ibn Shatir**. Ibn al Shatir was a 14th century Syrian mathematician, astronomer and engineer.

The first manifestation of this newsletter was the Leys Satellite, so I'll be using excerpts from those issues, in Beleguese.

After two CPD courses in astronomy last year, earlier this month, I began a degree; BSc Natural Sciences: Astronomy and Planetary Science.

Recommended book - Collins Stargazer's Bible

Recommended YouTube video - BBC: How Do You Grow Plants in Space?

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Sunflower

There are seventy species of this plant from the daisy family, but I don't know which species they grew up there; I hear they've grown zinnia, kale, peas, cabbage: mustard too . From two hundred and fifty miles up, travelling at 17, 500 mph, the **International Space Station** must be the pinnacle – professionally as well as physically - for an astrobotanist: once in a lifetime opportunity, to grow bougainvillea in space. I saw the ISS once; from the top of Chislehampton Hill, zooming across the sky. As I said in the editorial of the first issue; closest to the Leys, I think this hill is the best for stargazing. Going back to flora. I know they've cultivated flowers and vegetables, but not sure if fruit has been grown; so I raise my hand, to suggest lemon and soursop. And those on the station, racked by homesickness, must be gladdened by the sunflower, golden talisman of the voyage.

from Leys Satellite issue three



from Gardener's World

Sunflower

Trigonometry Chant

for Ibn Yunis, Muhammed Bagayogo and Pat Thomas

Did you ever get twisted up, trying to unravel, the celestial spangle, sprinkling blessings across the sky?

It might seem like trickery to you and me; but not to Ibn Yunis, saluting Sirius, master of trigonometry

You're not winning; head warming up, sizzling, approaching the temperature of Venusian lava.

Battered by ratio, how you wish you could speak, with the one called Bagayogo, who wrote a classification of stars. Muhammed Bagayogo, please tell me what you know: taught astronomy at Timbuktu.

I'm in adversity, mathematically; but not Ibn Yunis, saluting Sirius, master of trigonometry.

Head pulverised by trajectory, as well as wave property, interaction with sound and light.

In the discussion of triangle, the talk of right angle: song of the original pyramid. Chant Al-Khwarizmi and Abu al-Wafa: verses from the Golden Age.

Chant

Chant Al-Khwarizmi,

And Abu al-Wafa.

Al-Khwaizmi,

Abu al-Wafa:

Chanting for Persian scholar.

Chant Al-Khwaizmi,

Abu al-Wafa.

Al-Khwaizmi,

Abu al-Wafa:

Stepping stones for astronomer.

When they saw Sirius smile, heralding the flooding of the Nile, promise of wheat and watermelon.

White Nile Uganda, Blue Nile Ethiopia, meet in Sudan and flow on.

After Venusian lava, head's in need of a cooler. Never needed for Ibn Yunis, saluting Sirius, master of trigonometry.

Chant

Cyro, cryo, volcano, ice water to cool my head down. Geysers of Pluto, words of Bagayogo, something to ease your head down.

Ibn Yunis, acclaimed astronomer, given the role of official timekeeper, informing medieval Egypt, of the five times of prayer.

Chant

Cairo, Cairo, speaki of Bagayogo, given a doctorate by Al-Azhar. Recognised his glow, intellectual albedo, reflecting across the Sahara.

Icons of astronomy; one from Egypt, the other from Mali, sages of the evening sky. Ibn Yunis, from the 10th, Bagayogo, 16th century; two scholars who gave us the gift of knowledge, of the beauty that is above us.

"Father of Astronomy," during time of the Fatimid Dynasty, observatory on Mount Mokattam. Knowledge of conjunctions, as well as eclipses: they still sing of Zij Hakimi. Great Ibn Yunis, saluting Sirius, master of trigonometry.

Glossary

Abu' I-Hasan Ali ibn Abd al-Rahman ibn Yunis

10th century Egyptian astronomer, mathematician and astrologer, known in the Islamic world, as the "Father of Astronomy."

Muhammed Bagayogo as Sudane al-Wangari al-Timbuktu

16th century Malian scholar of Timbuktu University, who taught astronomy amongst other subject matter and wrote a classification of stars.

Sirius

Brightest star in the night sky. Visible in the northern skies from winter to spring.

Timbuktu University

Malian university which had its Golden Age in the 16th century, based in the eponymous city.

Muhammad ibn Musa al-Khwarizmi

9th century Iranian mathematician, astronomer and geographer, pioneering figure of trigonometry, known as the "Father of Algebra."

Abu al-Wafa al-Buzjani

10th century Iranian mathematician and astronomer. Like al-Khwarizmi, a pioneering figure of trigonometry.

Cryovolcanism

Volcanoes in the solar system, that generate plumes or geysers of ice particles.

Albedo

Reflective aspect of celestial bodies. Enceladus, a moon of Saturn is the most reflective body in the solar system.

Zij Hakimi or Hakemite Tables

Shortened title of book of astronomical tables, written by Ibn Yunis, named after his patron, Caliph al-Hakim of the Fatimid Dynasty.

Conjunction

When two celestial bodies appear to be very close to each other. Ibn Yunis documented Mercury and Venus.

Betelguese

Community Astronomy: East Oxford

Learn about the celestial objects; how they were formed, where they reside, how they interact. The pioneering astronomers, past and present. Space programs, telescopes and observatories. Folklore of the skies and ethnoastronomy.

FIRST TUESDAY OF EACH MONTH: 7-8PM

**Room P107
Leys College
Blackbird Leys Road and Cuddesdon Way
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Open to all twelve plus. Those under 18 must be accompanied by an adult.

Monthly Betelguese newsletter

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The problem is, most people believe that real science is too difficult and complicated for them to understand. But I don't think this is the case...most people can understand and appreciate the basic ideas if they are presented in a clear way without equations, which I believe is possible and which is something I have enjoyed trying to do throughout my life.

Stephen Hawking: from *Brief Answers to the Big Questions*