

#SCIENCE

Moon To Get Its Own Time Standard

Ever wondered what time it is on the moon? Soon, there will be an answer to that question.



The White House on Tuesday directed NASA to establish the first-ever unified 'standard of time' for the moon and other celestial bodies by the end of 2026, as part of a push by the U.S. to set international norms in space. The prospect of a lunar time zone comes as the U.S. and private companies are rushing to send astronauts to the moon in the coming years, some hoping to deliver internet services to the lunar surface and expand exploration efforts.

A memo from Arati Prabhakar, head of the U.S. Office of Science and Technology Policy (OSTP), confirms that NASA will work with other parts of the U.S. government to devise a plan for a *Coordinated Lunar Time* (LTC), a standard time reference for lunar spacecraft and satellites that requires precise timing for their missions.

"U.S. leadership in defining a suitable standard, one that achieves the accuracy and resilience required for operating in the challenging lunar environment, will benefit all spacefaring nations," the memo said.

OSTP Deputy Director for National Security, Steve Welby, said in a statement that the White House is aiming to establish celestial time standards "for safety and accuracy." NASA, private companies and international space agencies prepare to launch missions to the moon and other celestial bodies such as Mars.

"A consistent definition of 'time' among operators in space is critical to successful space situational awareness capabilities, navigation, and



FOR RANDHIR MANDAWA

By virtue of knowing Randhir so well, and going to *Mandawa house* so often, I became close to the other members of the Mandawa family as well. I remember accompanying his late father Thakur Devi Singh to Jodhpur, for attending an INTACH meeting, convened by Maharaja Gaj Singh at *Umaid Bhawan*. Randhir's younger brother, Pradyuman, was also a good friend and we were continually in touch. His elder brother, Kesari Singh, invited me for the wedding of both his daughters to Mandawa. I was always on his guest list for any of the generous bashes that he hosted.



Jagdeep Singh

I really, a tribute, an obituary should be written within a few days of one's passing away. It has taken me almost two months to get over the utter shock of the untimely demise of *Randhir Vikram Singh Mandawa*.

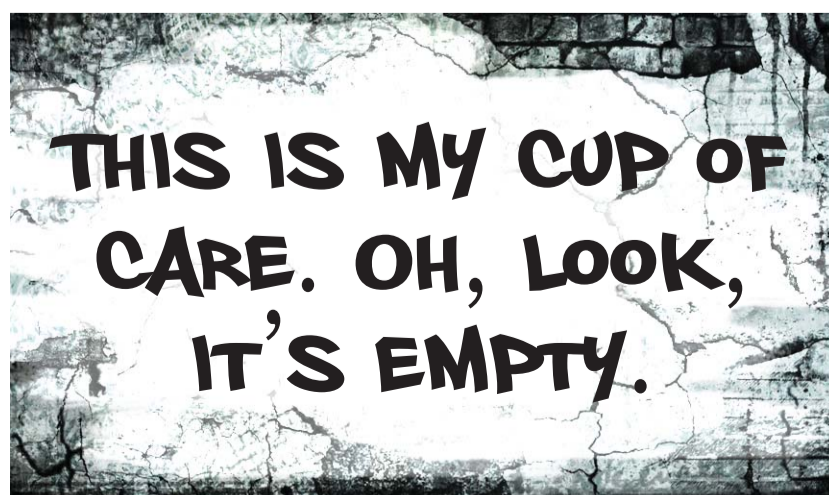
A question, which the school-boys often want to ask among themselves, 'Who is your best friend?' If I had been asked the same, I would have replied *Randhir Mandawa*, without batting an eyelid, which is why the shock. I can categorically state that Randhir was my go-to person for any piece of advice or a solution to a problem. He was always 'accessible.'

Randhir had been a friend of mine since way back in January of 1963, when I joined Mayo College in the fourth standard. A year junior to me, we became good friends, right from the beginning. In the Junior School, he was taller than most of us and he then had a nick-

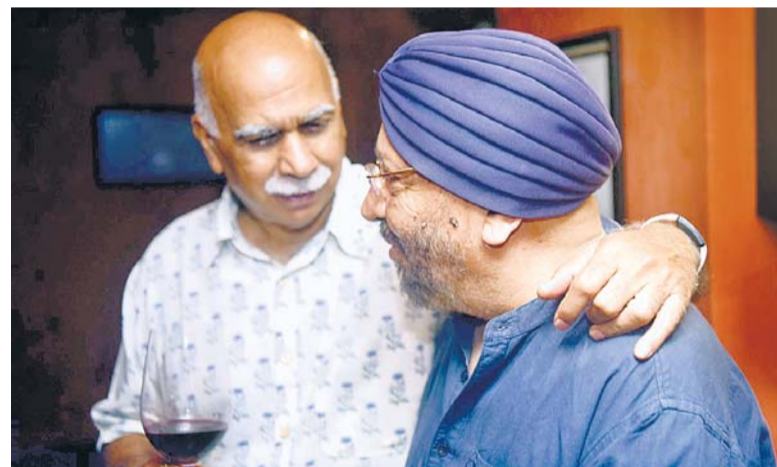


With Randhir at the launch of my book at Mayo.

THE WALL



#A TRIBUTE



With Randhir.

name called 'Oonth' (Camel). Later, some of us called him '*Randy*' in school.

During the rest of the seven years I was in school, our friendship only strengthened. A good athlete, he was always smartly turned out, be in his *Jodhpurs, blazers* or the *Sunday sofa*. His shoes were always polished and his stockings were always pulled up. A good painter and a sculptor,



Randhir Vikram Singh Mandawa.

a statue that he co-sculpted, of *Guru Nanak* in Mayo, stands as a testament to his incredible sculpting and creative skills.

For college, Randhir had gone to the M.S. University in Vadodara for doing his Fine Arts. During the vacations, in Jaipur, we would galivant on his *Vespa* scooter and later on a mobile. I lost touch with him when I left Jaipur.

I re-established contact with him once again, when I came back to Jaipur at the end of 1978. He was then married. I went along with Randhir and his wife Manjul, in their *brown flat* for the mandatory Sunday morning English movie, followed by coffee at the then *Kuality's* on MI Road. I also went, along with them, calling on

some of our common friends. Sunday evenings used to be *Doordarshan Hindi movie time*, which Manjul would never miss. For Randhir and I, it was the boys' out evening, when we caught up with our friends over drinks and backslapping camaraderie.

When I launched my weekly newspaper, *Rajasthan Echo*, he had no compunction for going with me, for soliciting advertisements for my newspaper. He was always available to assist. We would meet often and I would often hitch a ride with him for any late-night party since I didn't have a four-wheeler, then. By virtue of knowing Randhir so well, and going to *Mandawa house* so often, I became close to other members

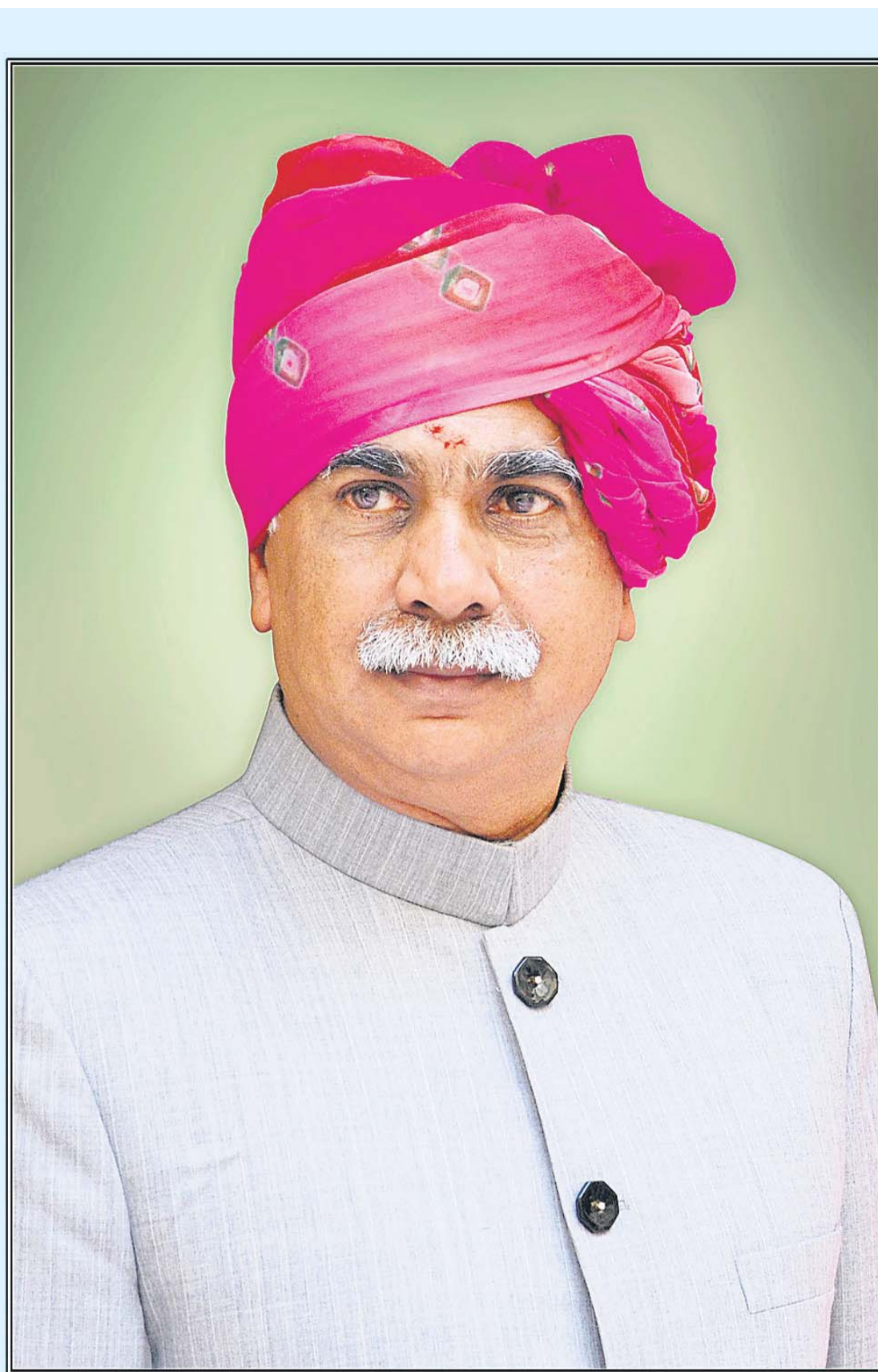
of the Mandawa family as well. I remember accompanying his late father Thakur Devi Singh to Jodhpur, for attending an INTACH meeting, convened by Maharaja Gaj Singh at *Umaid Bhawan*. Randhir's younger brother, Pradyuman, was also a good friend and we were continually in touch. His elder brother, Kesari Singh, invited me for the wedding of both his daughters, to Mandawa. I was always on his guest list for any of the generous bashes that he hosted.

In 1994, when Randhir won a close electoral contest to become the member of the Mayo College Governing Board, I had organised a couple of vehicles, with our friends, to go and vote for him in



International Day of Conscience

Imagine a world illuminated by the light of conscience, where every thought and action aligns with peace, love, and understanding. It's a day when we commit to a culture of peace, cultivated through love and conscience. On April 5th, we celebrate the International Day of Conscience. This isn't just any ordinary day. It's a global call to awaken the deepest part of our humanity, to listen to that 'soft voice within' that knows 'right' from 'wrong.' It is letting that voice guide us in creating a world, brimming with solidarity and harmony.



Randhir Vikram Singh Mandawa.

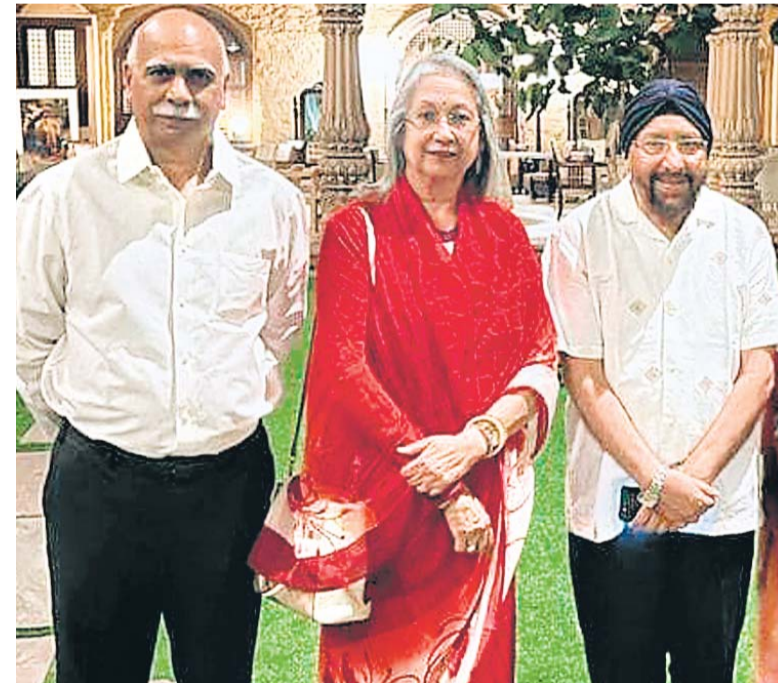
When I told him that I wanted to do the launch of my poetry anthology in Mayo, he immediately coordinated with the Principal and the President of the OBS and had it organised impeccably.

While I was away to Jakarta for three years, I had invited all my friends to drop in to Indonesia. However, Randhir made it a point to specially come to Jakarta and spent a week with me.

Ajmer. After getting into the Board, he too made sure to project me prominently in all forums. Not surprising that I became the President of the Mayo College Alumni Association at Jaipur and did stints, both as the Secretary of Mayo College Old Boys' Society and as the member of the Governing Board. From 1994 onwards, he remained in the Governing Board and served in

It is easy to say that time is a great healer, but to quote a line from one of my poems, "*Death doesn't die easily*."

My condolences to his immediate family: Manjul, Rohini, Niyati, Siddharth and Suryaveer.



With Randhir and Manjul at Fort Tijara.

various committees. His contribution to Mayo College, in the past three decades, is nothing short of phenomenal. It was amazing as to how he could take time out for so many different fora that he was active in. He had become a master of multi-tasking. When Gods, in all their wisdom, decided to take him away, he was at the peak of his prowess. Apart from being the Chairman of the Mayo College, he was also the President of FICCI Rajasthan and the President of Indian Heritage Hotels Association. He was also the past President of the Federation of Hospitality and Tourism in Rajasthan (FHTR). All these organisations still cannot get over the huge loss to their fraternity.

Randhir believed in living a very disciplined life, never more than two pegs of *whisky* at a party, never missing his morning '*puja*' or his evening walk, never having a drink during the day. Great hosts, Randhir and Manjul threw great parties, either at their residence or *Mandawa Haveli*. I attended the wedding of both their daughters, Rohini and Niyati, at Mandawa.

A great fun person, Randhir could be the very life of a party. He loved banter and joshing. He also believed in the maxim, God is in details. Whenever he planned any event for IHHA or FICCI, he would go to the minutest details. He hesitated to drop in my office to plan press publicity and PR campaign for any event.

When I told him that I wanted to do the launch of my poetry anthology in Mayo, he immediately coordinated with the Principal and the President of the OBS and had it organised impeccably. While I was away to Jakarta for three years, I had invited all my friends to drop in to Indonesia. No one could make it. However, Randhir made it a point to specially come to Jakarta and spent a week with me.

The last time that I met him was on 11 January for a Board Meeting at a Mayo Franchisee session at Sitapura in Jaipur. Since I did not have my driver, I said that I would take lift back from him. He too did not have a driver that day and drove all the way from Sitapura to my residence. I was surprised that on the way back, he checked up on everyone from my son, my daughter, my son-in-law and my wife, Pinky. A week later, I got to know that he had been operated upon for an aggressive, malignant brain tumour. He returned home post-surgery though, it later led to complications for him, to pass away on 26 January. His passing away sent a shock wave in the city. The Times of India aptly wrote in its obituary that a 'Heritage Tourism Icon' had passed away.

So, if you were looking at Earth from far away, the presence of methane and oxygen 'together'

#EXTRA-TERRESTRIAL

Have We Already Found 'Alien' Life?

Multiple pieces of evidence exist that we may someday recognize as the first glimmer of fact that we are not 'alone.'

Exciting rumours have been swirling in the halls of *astrobiology*. The James Webb Space Telescope, which has been scrutinizing the cosmos in unprecedented detail, since its deployment in 2022, has been on a tear lately, and folks in the know say that it might finally have detected 'life beyond Earth.' That's the buzz, anyway. Says astrophysicist Rebecca Smethurst, "I think we are going to get a paper that has strong evidence for a *biosignature* on an *exoplanet*, very, very soon."

In other words, Awesome! But also, Calm down. "Strong evidence for a biosignature" is a long way from proof of life on other planets. A *biosignature* is basically a signal that's consistent with life but that may also be produced by something else. It's intriguing but not incontrovertible evidence. And given the many uncertainties surrounding a discipline, still in its infancy, the public should not get its hopes up. "So many people want this to be the year. There will definitely be claims," says Sara Seager, an MIT professor of astrophysics. "There won't be any robust findings."

One reason it's hard to pin down unequivocal evidence of life is that we don't really know what life is. Here on Earth, biology involves DNA and carbohydrates and requires liquid water, but the chemistry could be different in other worlds. Maybe, life could use liquid methane instead of water, or silicon instead of carbon. So, in its most fundamental formulation, what is life all about, and how do we know what to look for?

One idea is that life must always exist far from chemical equilibrium. Earth's atmosphere, for instance, contains both oxygen and methane. Left on their own, these molecules would react to form carbon dioxide and water, and in time, the oxygen and methane would vanish. "The only reason they are present and co-exist is that they keep being replenished by some process," says NASA astrophysicist Marc Neveu. "In our case, it turns out to be life."

So, if you were looking at Earth from far away, the presence of methane and oxygen 'together'



2004: Life on Mars

In December 2004, scientists reported that a spectrometer aboard the J. European Space Agency's *Mars Express orbiter* had measured a tiny but detectable quantity of methane gas in the Red Planet's atmosphere. That same year, astronomers using ground-based telescopes, reported that they too had found signs of methane. On Earth, the gas is produced mostly by living things (including, famously, cow farts) but can also be produced as a result of seismic activity. "It's widely thought that there are underground streams of liquid water," says Neveu. "It's certainly possible that there are microbes in this environment."

2023: Life on Europa

Jupiter and Saturn, the largest planets, are too cold and too far from the Sun, to harbour life as we currently know it. But several of their icy moons are believed to harbour oceans below their frozen surface. Particularly interesting is Jupiter's moon *Europa*. Last year, the Webb telescope detected carbon dioxide within a geologically young area of the surface, suggesting it might have come from an ocean.

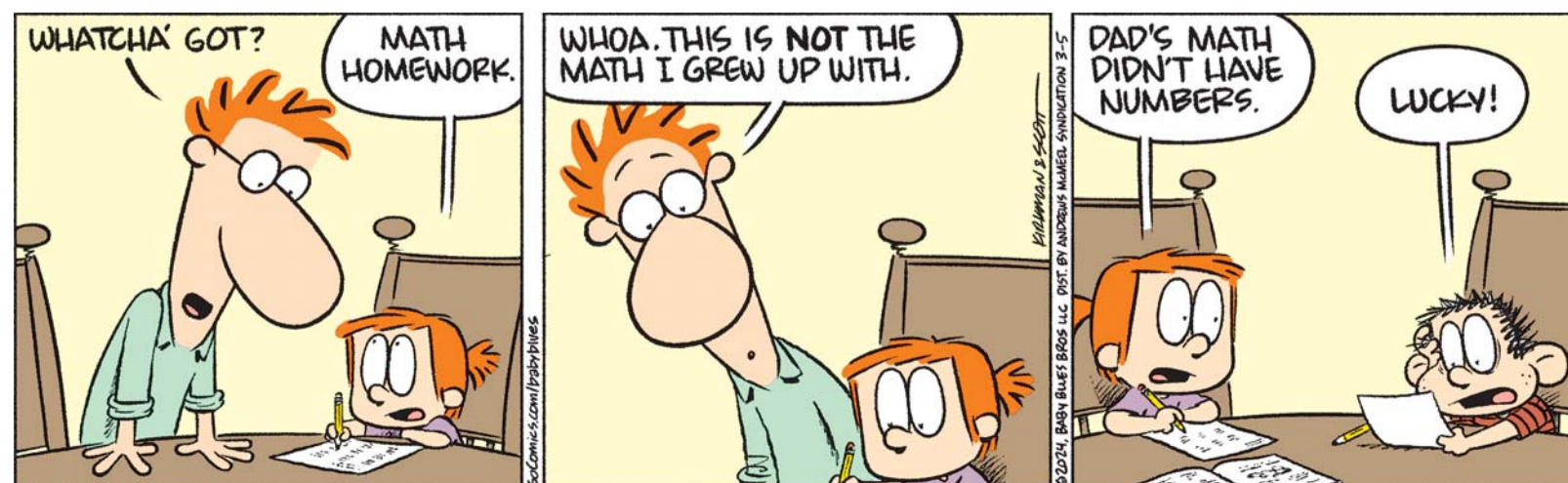
2023: Life Beyond the Solar System

Astronomers have long assumed that 'stars' outside our solar system have planets around them, but not until 1992 were the first ones discovered orbiting neutron stars. Now, we know of more than 5,000, but we've had no evidence of whether any harbour life. Then, last fall, a team of U.S. and U.K. astronomers released a preprint saying that they had detected methane, carbon dioxide, and maybe dimethyl sulfide, or DMS, around a star called *K2-18 b*, which lies 124 light-years away. On Earth, DMS is produced by living organisms.

It's an extremely tenuous finding, however. Exoplanets are so far away and so dim compared with the star they orbit, that even the mighty Webb can't image them directly. Instead, it waits for the planet to pass in front of the star and then detects a change in the intensity of the light received, in this case, on the infrared part of the spectrum, just beyond the range of human perception. Seager is skeptical, saying that what the authors took to be a sign of DMS is really just a misinterpretation of the data. "There's no signal," she maintains.

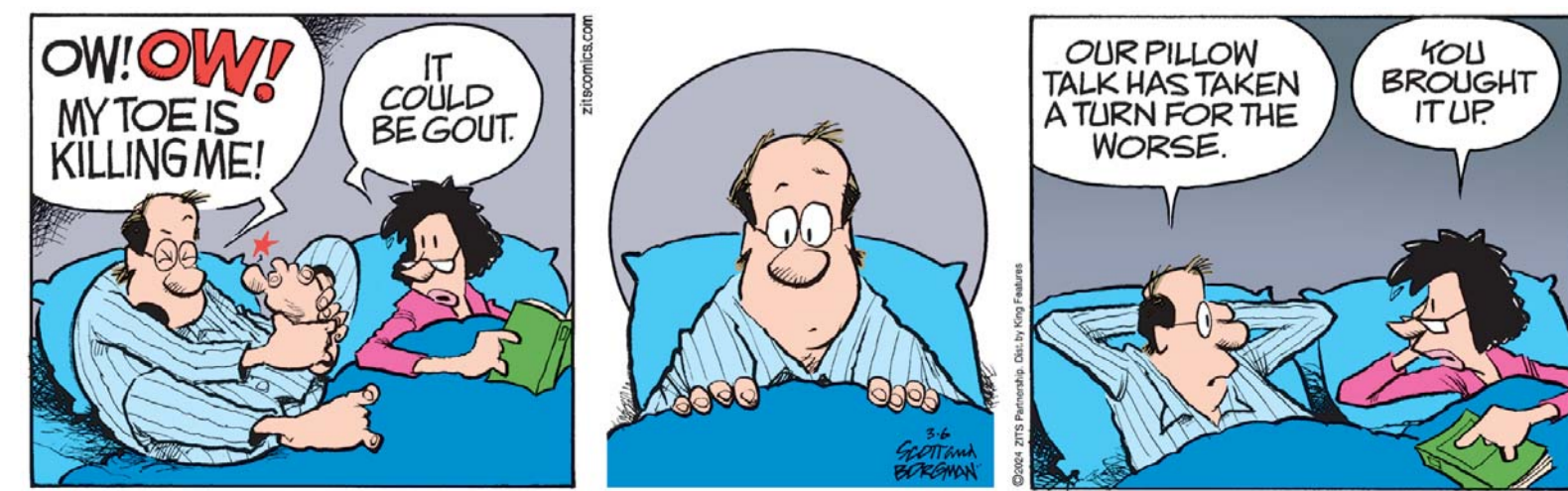


BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman