

WAITING FOR DAYBREAK

Chandrayaan-2 missed this rendezvous with the moon, but the next date is not too far

India's second moon mission, Chandrayaan-2, was pulled back from launch just 56 minutes before its scheduled liftoff on July 15. This was owing to a technical glitch in the GSLV Mark-III rocket launcher. No rescheduled date has been announced for launch. This has no doubt served as a damper on those who eagerly looked forward to India being only the fourth country to launch a mission that would land on the moon, and the very first to land on and explore its south pole region. Yet, it was best that the glitch was discovered before the launch. Rocket launches always have a nail-biting finish. Even the GSLV-D1, the slighter predecessor to the GSLV Mark-III, suffered such a setback when it was about to be launched for its first developmental test flight in 2001. It was called off exactly one second before launch, as it was discovered that one of the four liquid propellant strap-on stages had not developed the required thrust. This test flight was conducted just 21 days later, paving the way for several successful launches of the GSLV rocket subsequently.

What seems to have touched the popular imagination is that the current launch window ends on July 16 and if this window is missed there could be an indefinite delay in rescheduling the launch. Coupled with news reports that checking and correcting the error could take up to 10 days, this has led to dire pronouncements of an indefinite postponement of the mission. The 'launch window' is determined by several factors. One of the most important considerations is that any spot on the moon receives sunlight for approximately 14 (earth) days before being plunged in night for another fourteen. The landing has to be timed so that it maximises the overlap with the sunlit days on that spot. This is because the lander and the rover need solar energy to power them and to keep the instruments warm. Therefore, given a landing spot that can be seen from the earth, the landing date has to coincide with the sixth phase of the moon (first quarter) as seen from the earth, on that spot. Secondly, once placed on the moon orbit, Chandrayaan-2 must have full visibility to the ground station, which will determine the time of operation of the landing. From the date of launch to the date of landing, the planned interval is about 54 days. Much of this time is needed for the Chandrayaan-2 mission to make various orbital manoeuvres and operations, but there is a leeway of a day or two to take some decisions. A window that takes all this into account, is available for about 10 minutes on each day now for about a week. Such a window can be found every month. Other tighter windows are available but are high-risk options. So even if Chandrayaan-2 misses its rendezvous with the moon this month, it will find a date, perhaps even next month, that will be suitable.

<u>Words</u>	<u>Kind</u>	<u>Meaning</u>
Rendezvous		Meeting, assignment, appoint
Glitch		Malfunction, fault
Announce		Pronounce, declare, heard, proclaim, aver, arrow
Damper		Curb, check, restraint, restriction, obstruction
Explore		Investigate, look into, consider, example
Nail biting		Full of tension, on the line, over wrought
Predecessor		Fore runner, precursor, antecedent, ancestor
Call off		Candle, axe
Propell		Drive, move, power, push
Strap		Fasten, secure, tie, bind, lash
Thrust		Shore, push, force, plunge
Subsequent		Following, ensuring, succeeding, next
Dire		Terrible, dreadful, appalling, frightful, awful
Pronouncement		Declaration, profess, herald, announcement
Plunge		Dive, sump, threw oneself
Overlap		To cover
Coincide		Occur simultaneously, happen, together
Manoeuvres		Tricks, artifice, ruses, ploys, chicanery
Lee way		Freedom, latitude, liberty
Coupled with		Combine, accompany, mix, incorporate
Approximately		Roughly, circa, round about

CLOSER THAN CLOSE

England did well to win the World Cup, but New Zealand did not deserve to lose

Summit clashes of global sporting tournaments can often be underwhelming. One team revels in the occasion, the other wilts, and a lopsided climax occurs. But Sunday's ICC World Cup final involving England and New Zealand at Lords wasn't cut from the same cloth. Never has a cricket match invested with such magnitude concluded in a tie. The same finish line was again replicated after the super over was taken to break the stalemate. The rivals scored 241 apiece in their respective innings and drew level at 15 in the super over. Ideally both units should have shared the

trophy but the quest for a singular winner and a tournament law that mentioned cumulative boundaries as the ultimate deal-breaker, helped England pip New Zealand. The host had 26 strikes past the ropes, well ahead of the visitor's 17. For a contest of gladiatorial proportions, it was perhaps an unfair judgment. In the current popular imagination both squads are champions, but after many years when only cold statistics linger, England will have the halo and New Zealand will remain the bridesmaid. The tussle that kept London agog had many stars, but one player shone the brightest. Ben Stokes, who had spoken about how England cannot be denied, rose to the occasion, and his splendid unbeaten 84 helped Eoin Morgan's men keep pace with Kane Williamson's unsung heroes.

England, the willow game's birthplace, needed this triumph to resuscitate the sport which is waning across the country. The game's followers belong to an older demographic space and Asian immigrants, while the youth root for football. A win of this scale should increase footfalls at various training academies and grounds, and the talent base will widen. For New Zealand, the second consecutive loss at the last hurdle will hurt, but unlike in the 2015 edition where it succumbed meekly to co-host Australia, here it fought with all its might, be it crucial runs or decisive wickets. The Black Caps dished out outstanding fielding, and in a face-off of slender margins every run saved has deep ramifications. Williamson, who excelled with the bat and amassed 578 runs, was a brilliant captain and he never lost his sense of grace. Judged the 'Player of the Tournament', the Kiwi skipper and his men can return home with their heads held high. For a championship that featured skewed games and four rained-out fixtures in its first part, the second stage proved engrossing and the final was the piece-de-resistance. The World Cup also held a mirror to cricket's overall health. Except for England, New Zealand, Australia, India and to some extent Pakistan, the other squads have become weak and the respective boards have to address structural flaws. The sport needs robust competition, not jaded outfits.

<u>Words</u>	<u>Kind</u>	<u>Meaning</u>
Summit		Top, peak, crest, crown, apex, pinnacle
Clash		Confrontation, skirmish, fight, battle
Underwhelming		Unexcited, unimpressive
Wilt		Droop, sag, become, limp, wither, shrive
Lopsided		Crooked, askew, off centre, uneven, asymmetrical
Magnitude		Immensity, vastness, hugeness, enormity
Replicate		Copy, reproduce, duplicate, recreate
Stalemate		Deadlock, impasse, standoff, draw, tie, dead beat
Apiece		Respectively, each

Quest	Search, hunt, pursuance of
Cumulative	Increasing, accumulative, growing, mounting
Pip	Seed, stone, pit
Halo	Ring of light, nimbus, aureole, glory
Bridesmaid	A woman girl who helps a woman on her wedding day
Tussle	Fight, duel, brawl, confrontation, scuffle
Agog	Very excited (to hear), transported
Triumph	Victory, win, conquest, success, achievement
Resuscitate	Bring round, revive, get over, come round
Wane	Decrease, diminish, dwindle
Succumb	Surrender, give up, capitulate
Meek	Submissive, yielding, obedient, compliant
Dish out	Distribute, deal out, dole out, mete out, share out
Slender	Slim, lean, willowy, svelte, sylphlike
Ramification	Consequences, result, after math, out come
Amass	Gather, collect, assemble, accumulate, stock upshot
Engross	Absorb, rivet, grip, engage
Immigrant	New comer, settler, migrant, emigrant
Hurdle	Obstacle, difficulty, problem, barrier, impediment
Face off	Confrontation
Excel	Shine, be excellent, be outstanding, be skillful
Amass	Collect, hoarde, bank up
Skewed	Inexact, incorrect
Fixture	Math, schedule
Flaw	Defect, blemish, fault, weak point
Robust	Strong, vigorous, sturdy, tough, powerful
Jaded	Very tried, fatigued, weary, ready to drop
Outfit	Dress, costume, suit, ensemble, attire, clothes