Dig deeper for Mars life, scientists urge

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Probes in search of MarÂ-tian life havenâ€™t drilled deep enough to reach the livÂ-ing cells that sciÂ-enÂ-tists hope may lurk withÂ-in the red planÂ-et, acÂ-cordÂ-ing to new reÂ-search. A sunÂ-set on Mars, an imÂ-age that this month was voted as faÂ-vorÂ-ite in a pubÂ-lic poll of Mars imÂ-ages from NASA's SpirÂ-it rovÂ-er. (CourÂ-teÂ-sy NAÂ-SA).RaÂ-diÂ-aÂ-tion would have killed off most cells near the surÂ-face long ago, the inÂ-vesÂ-tiÂ-gaÂ-tors said. UnÂ-like Earth, Mars is unÂ-proÂ-tectÂ-ed by a magÂ-netÂ-ic field or thick atÂ-mosÂ-phere; for ages it has been laid bare to raÂ-diÂ-aÂ-tion from the sun and othÂ-er stars. The reÂ-search, to apÂ-pear in the jourÂ-nal GeoÂ-physÂ-iÂ-cal ReÂ-search LetÂ-ters this week, conÂ-cÂ-ludÂ-ed that any less than a few meÂ-ters (yards) deep, cells couldÂ-nâ€™t take that beatÂ-ing for long enough to be found alive. The auÂ-thors mapped raÂ-diÂ-aÂ-tion levÂ-els at varÂ-iÂ-ous depths and conÂ-cludÂ-ed that the best place to search is in ElyÂ-siÂ-um, a newÂ-ly disÂ-covÂ-ered froÂ-zen sea.â€œFindÂ-ing hints that life once exÂ-istÂ-edâ€”proÂ-teins, DNA fragÂ-ments or fosÂ-silÂ-sâ€”would be a maÂ-jor disÂ-covÂ-ery in itÂ-self. But the HoÂ-ly Grail for asÂ-troÂ-biÂ-olÂ-ogy is findÂ-ing a livÂ-ing cell that we can warm up, feed nuÂ-triÂ-ents and reÂ-aÂ-wakÂ-en for studyÂ-ing,â€• said LewÂ-is DartÂ-nell of UniÂ-verÂ-siÂ-ty ColÂ-lege LonÂ-don, the studyâ€™s lead auÂ-thor. Even beÂ-fore his reÂ-port, the overÂ-all dryÂ-ness of the Mars landÂ-scape had dimmed hopes that acÂ-tive cells would turn up easÂ-iÂ-ly. But sciÂ-enÂ-tists had hoped that at least some dorÂ-mant life forms, such as spores, might be found, DartÂ-nell said. His conÂ-tenÂ-tion is that even thoseâ€”while typÂ-iÂ-calÂ-ly hardyâ€”couldÂ-nâ€™t have surÂ-vived the bilÂ-lions of yearsâ€™ worth of raÂ-diÂ-aÂ-tion that would have pelted them since waÂ-ter was last wideÂ-spread.SciÂ-enÂ-tists will have to dig deeper or tarÂ-get very speÂ-cifÂ-ic, hard-to-reach arÂ-eas such as reÂ-cent craters or arÂ-eas where waÂ-ter has reÂ-cently surÂ-faced, he added. The team arÂ-gued that the choicÂ-est huntÂ-ing grounds should be the ElyÂ-sian ices beÂ-cause the froÂ-zen sea seems to have surÂ-faced onÂ-ly in the last five milÂ-lion years, a peÂ-riÂ-od conÂ-ceivÂ-aÂ-bly surÂ-vivÂ-aÂ-ble by dorÂ-mant life forms.Ice alÂ-so proÂ-vides a shield of hyÂ-droÂ-gen to proÂ-tect life on Mars from deÂ-strucÂ-tive raÂ-diÂ-aÂ-tion parÂ-tÂ-iÂ-cles, and is far easÂ-iÂ-er to drill through than rock, DartÂ-nellâ€™s team said. But overÂ-all, the drillÂ-ing is a probÂ-lem: even with the ice, curÂ-rent drills arenâ€™t poÂ-tent enough to reach where the livÂ-ing cells might be, the reÂ-searchÂ-ers added. OthÂ-er ideÂ-al sites, they said, inÂ-clude the gulÂ-lies reÂ-cently disÂ-covÂ-ered in the sides of craters, as these are thought to have flowed with waÂ-ter in the last five years.