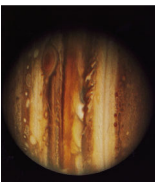


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Umkhathilibe Ephaketheni Lami

Kwesokudla: Isithombe senktonsa esathwetshulwa ITloli omkhathililayager ngowe-1979. Imibala ifakelwe ukucacisa imithingwane thizeni ebuwenti balomzulane.



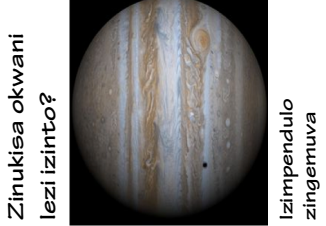
Kwisinxele: Umdwebo womoya weNktonsa, odwetshwe uDon Dixon.

INktonsa iyisithuhha ngokuba: iphunga layo lushintsha ngeqeqeba neqeqeba lomoya okulona.

uqeqeba olukuphiko lunukisa okweNhlanzi ebolile, ngokuthi imizwayi yeLamunya

Ekuhambeni kwesikhathi, iphunga leNhlanzi likubana nalelo elamamaManda abolileyo, ngoba IMvundeli nalo lusuke lukhona.

Ekugqeni, sihlonga iphunga leziliwezane elimnucu, eliqhamuka kusayandi. Kuye kube khona nephunga likaGaliga ngemxa kaMarusini otholakala kulomZulane omkhuluKangaka.



Izimpendulo zingemuva

Zinukisa okwani lezi izinto?



Imibuzo

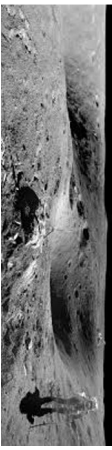
Imizwayo enganuki

umLwamane utholakala eminyoyeni yemizulane emubalwa (iNktonsa, uNomakhethaba, uNomaxhama kanye no nolundwa), kwizibhaganyezi (i-67P/-Churyumov-Gerasimenko), kanye nakwi Iryanga enkululekazi kaNomaxhama (Sazi). UVJawane ungaba nesizinda sejyoloji noma sekhylo. Lo moya awunaphunga. Ngabe kuyakwethusa lokho? umLwamane (ijengo Bhuthre) awunaphunga. Mbala, amathangeni egesi yokuphaka kunezelwa ngobuyoyi obunuka phu ukuze abantu bezokwazi ukukunuka lapho ivuza khona. Izifundama (iHwelanga, iNkanyive, iSAlawe....), kanye noNashabi kanye naManzi, eminye yemizwayi engenanuki. INaside ikhona emoyeni womzulane iHD 1 89733B. Ayinaphunga, kodwa ishisa iso lezikhwelela emakheleni ethu, okudala ubuhlungu. 9

Ngabe umkhathilibe unuka Ngeмпeла?

Amakhala ethu adinga ingcosana yemizwayi ukuze ezwe iphunga. Ulanqi (isibalo semizwayi kumqumbu mnywe) kuMkhathilibe luncane ukudlula lelo elutholakala eMhlabeni. Ukuze sibe nemizwayi elinganayo, singadinga ukuba noMqumbu omkhulu kuMkhathilibe ukudlula loyo oseMhlabeni. kanti furthi singadinga ikhala elikhulu impela laphe kuzongena khona imizwayi. Ngokwerrfundindalo yomkhathi yaseMekisikho uDaniel Tafoya, ukuze sikwazi ukunuka iLamunya elikwifule Mpambano-KL, singadinga ukuba amakhilomitha ayi-1.4 km ubude ( ukugcina ubulingani phakathi kwekhala nobude).

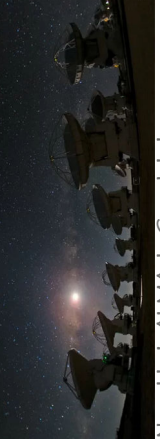
Inuka kanjani iNyanaga?



Isithombe senyanaga nomTloli womkhathi nkatshinye yeThurnelo lwaseMkhathilini weNASA lwe-Apollo 16.

AbaTloli bomkhathi una benuka isifanekiso esissha soThuli weNyanaga bathi lunukisa okomSizi oshile. Kodwa luthi lungabuyiswa laphe eMhlabeni. Iphunga lomSizi oshile lyaashabalala. Akekho owaziyo isizathu salokhu ukushabalala.

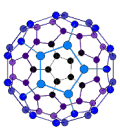
UBuso benyanaga bakhiwe umncwebe weshlabathi (owalethwa iziQhumanyezi ezamhizeka ebusweni benyanaga emasukwini ayo) kanye neNsimbi, uMcapane kanye noMgethe. Akukho ngisho neyodwa kulezi emukisa okomSizi, wona owenziwe ngovoyizane wetshe, uMcalahle kanye neSiBabuli.



Nqenhlal: ALMA, kuGwadule laase-Atacama eShile. Lawa amadlebe aqoqa amagagasi aneb angacuphi elingama milimitha ubde, aphinde ahlonge imizwayi emkhathini. Kusuka kwesinxele kuva kwesokudla: Imvundeli, Inukasababuli, iLamunya, umafusini kanye noMeikhapha. TA mabili okuqala anukiswa okeqanda elibolile kany noMnyolo, ngokulandlana kwawo. Lapho jiyi khona ingadala ukuphalaza, umkhawu wamehlo, noma kuholele ekuweni kwamaPhaphu. I-Lamunya linukisa okweNhlanzi ebolile, kanti umafusini unukisa okwaGaliga, kanti uMeikhapha unephunga elibi ngeмпeла: elihlanganisa leli likaGaliga, u-anyanyisi, ishaladi, kanye neklabishi elibilisiwe. Le mizwayi seyattholakala ezindaweni ezahlukene kuMkhathilibe, okubalwa kuyo inizulane, amafu ekudalajeka kuwo iziNkanyezi, kanye noBhaganyezi. 4

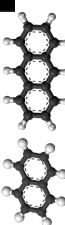
Sazi ngani ukuthi umkhathilibe unuka kanjani?

Uma imizwayi emkhathilini ishayisana, iyaqala itchingilize, iqhikize, bese iyaqoba. Lena iminyakazo ikhiqiza ukukhanya, ngokujwayele kwinsibovu noma kwinsimagu, lapho khona ibanga cuphi lokukhanya lehluka ngomizwayi ngomizwayi. Lapho sibhekisa khona izipopolo zethu emkhathilini bese sisebenzisa izinhloa kukhanya, sikwazi ukubona imithingwane enganakelile ngokukhanya, furthi sikholele izinhlobo zamizwayi etholakala emagumbini amane omkhathilibe. Yize singakwazi ukwunuka umkhathilibe ngqo, siyakwazi ukucabanga ukuthi unuka kanjani ngokuhlonza imizwayi etholakala kuwo, ngokuba siyazi le mizwayi ukuthi inuka kanjani laphe emhlabeni. 5



**6**

**Kwesokudla:** amaFulayini awuhlobo lomcalahle oluzalezile. Yize kunjima ukuwathola kuNomkhubulwane, asibhichibhili kwisigcawu somkhathini.



**omaphunga**

**Ngenzansi:** Eminye imizwayi yomcalahle eseyaphakanyiswa okubalwa kuyo **inafuthalini** kanye ne-**artilaleni**, enukisa okwetyela. Yomibili yahlorzwwa kwifu kwisiShomo iPerseus, cishe ama-700 ebangalukhanya kude kunoNomkhubulwane.

**Iphunga**

Inzwa yokunuka, njengaleyo yolimi, ingeyamakhemikhali ngokwendalo, kodwa isebenza nasebangeni elikude: kulula ukunika into kunokuyizwa ngolimi.

Imizwayi entanta emoyeni ifika kumankanka ethu bese igwinqwa iso lamafinyila. Ngaphezu kwamankanka kunescibubu sokunuka, ozinzwa zayo zifana nalezo zolimi.

Lezi izicubu ziphenleka lapho imizwayi yephunga ifinyelela kuzona, bese zidumnuza lolu ulwazi kwizidwa zokunuka, okuyizo ezithumela lolu ulwazi ebuchophweni. Uma zifika ebuchophweni, zivusa imizwa kanye nokughikiza imicabango yethu.

Ngalendlela, amaphunga asikhumbuza abantu, izindawo, kanye neziganeko esizitshela ukuthi sesizikhohliwe.

**5**



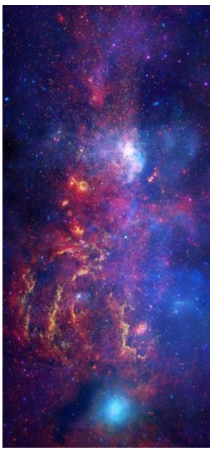
**IsiThombe sesiDangazeli esijye ngesihowe IM2-4B.**



Umdlwebo weLanga, imiZulane, iziNyanga zayo, uBhaqanyezi, kanye nemihlabana eyakha uHlelo lweLanga.

**INyama ethosiwe noma umkhafulo weMoto**

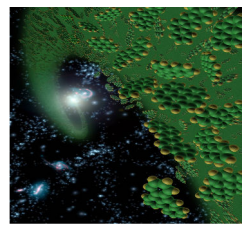
**KunomCalahle omuningi ukulula isihowe kuhlelo weLanga. Ukube siyakwazi ukuvunuka, ngabe unukisa okomule noma irtuthu kadizili ephuma emotweni.**



Mhawuribe imizwayi yamadlingozi etholakala kulesi isintshongo leyo ye**Thabathi**, ekhizizeka lapho isimnyu sezintuthane (esitholakala kubuthi bezintuthane) ininana noTshwala. I**Thabathi** linuka kuhle kweLumuli kanti futhi lizwakalisa okwomkwanane. Ekugineni, iphunga elirtthandi kumKhatthilibe.

UMnsali B2 Isintshongo esinesisindo esiphindeke cishe izigidi ezintathathu kwesLanga kanti futhi isisindo saso esilinganiseliwe kwi-150 kwibangakukhanya. Sitholakala kwindeni eduzela koMizilafasimbe.

UMnsali B2 uqukethe imizwayi eminingi ehlukenene. Isibonelo, imizwayi eyandulela impilo efana nokhoholo olumtoti (ushukela) kanye noTshwanane olumtoti



**Kwesokudla:**

**Imcalahwanzi emaphunga** awuhume lemizwayi emi kuhle kwezindandatho, erziwe ngomcalahle kanye nehwanzi. Atholakala cishe yonke indawo lapho sikhomba khona izipopolo zethu zomkhathi.

**7**

**Uhume Lemizwayi Yomcalahle**

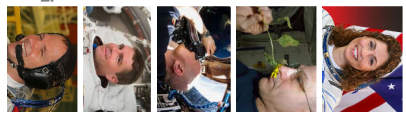
**ImiZwayi eyakhiwe ngamachwe omCalahle asetholakale kuwona wonke amagumbi omKhatthilibe: izicaba zomsumkambhlab, iziNkanyezi ezisihntshile, imiThalakazi, imiZulane, iziNyanga, nakwezinye izindawo.**

amangingi ayaxhifika kuwona wonke ilawo abizwa ngemicalahwanzi emaphunga Emhlabeni, lena itholakala kwizikhafulo zezimoto kanye nakuThosi. Inukisa okwimto eshile kanti futhi ziyagulisisa.



**Abatilos i asebeke baya emKhatthini bathi umKhatthilibe unukisa okwe:**

**Bathini abatilos bomkhathi?**



u-Anousheh Ansari: "Unukisa okwamakhethe enkokhokho omchachambiso".

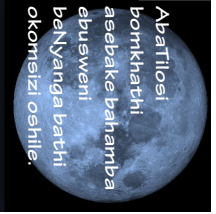
uDon Petri: "Ungikhumbuza okwomoya okhafuwa izishiseleli, okungumzuwa omunandi, osaneimbi futhi omtocti".

u-Alexander Gerst: "Ivange laMakinati kanye nesitibhla sesiThuthuthu sami".

uReid Wiseman: "Kuhle kwezinguqo ezilewakeme emva kosuku kumkhatthiko".

uKevin Ford: "Kuhle kwephunga engingakaze ngilizwe kanti futhi engingasoze ngalikhohliwe".

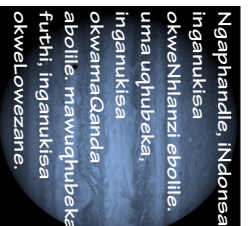
**2**



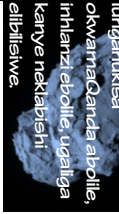
**Abatilos bomkhathi asebeke bhambaba ebusweni beNyanga bathi okomisi oshile.**



**UBhaqanyezi iChuri lunganukisa okwamaGanda abolile, imhlanzi ebolile, ugalliga kanye nekhalishi elibhalelwa.**



**Ngaphandle, INdonsa inganukisa okweNhlanzi ebolile. uma uqhubeka, inganukisa okwamaGanda abolile, maWuqhubeka futhi, inganukisa okweLowezane.**



**Isaluthe sakMparibano esiyukethiwe Imizwayi yomcalahwanzi omaphunga etholakala kumkhathulo wezimto emhlabeni.**



Uma ufisa ukufunda kabanzi ngalolu uchunguchunge kanye nezihloko ezethulwe kuleNcwajana, sicela uvakashele u: <https://www.tulimpr.org>

Inunuwabe: Nihlanhla Mzambho  
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