

Umkhathilibe Ephaketheni Lami



Amaphunga
Omkhathilibe



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Bathini abaNtilosi bomkhathi?



AbaNtilosi asebeke baya emKhathini bathi umKhathilibe unukisa okwe:

u-Anousheh Ansari: “Unukisa okwamakhekhe enkokhokho omchachambiso”.

uDon Petit: “Ungikhumbuza okwomoya okhafilwa izishiseli, okungumuzwa omunandi, osansimbi futhi omtoti”.

u-Alexander Gerst: “Ivange laMakinati kanye nesiTibila sesiThuthuthu sami”.

uReid Wiseman: “kuhle kwezingubo eziswakeme emva kosuku kumkhithiko”.

uKevin Ford: “Kuhle kwephunga engingakaze ngilizwe kanti futhi engingasoze ngalikhohlwa”.

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Iphunga

Inzwa yokunuka, njengaleyo yoLimi, ingeyamakhemikhali ngokwendalo, kodwa isebenza nasebangeni elikude: kulula ukunuka into kunokuyizwa ngoLimi.

ImiZwayi entanta emoyeni ifika kumankanka ethu bese igwinqwa iso lamafinyila. Ngaphezu kwamankanka kunesicubu sokunuka, ozinzwa zayo zifana nalezo zoLimi.

Lezi izicubu ziphehleka lapho imizwayi yephunga ifinyelela kuzona, bese zidumuza lolu ulwazi kwizidwa zokunuka, okuyizo ezithumela lolu ulwazi ebuchophweni. Uma zifika ebuchophweni, zivusa imizwa kanye nezinkumbulo kanti futhi zikwazi nokuqhikiza imicabango yethu.

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

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Sazi ngani ukuthi umKhathilibe unuka kanjani?

Uma imizwayi emkhathini ishayisana, iyaqala intingilize, iqhikize, bese iyagoba. Lena iminyakazo ikhiqiza ukukhanya, ngokujwayele kwinsibovu noma kwinsimagu, lapho khona ibangacuphi lokukhanya lehluka ngomzwayi ngomzwayi.

Lapho sibhekisa khona izipopolo zethu emkhathini bese sisebenzisa izinhlole kukhanya, sikwazi ukubona imininingwane enganakekile ngokukhanya, futhi sihlole izinhlobo zamizwayi etholakala emagumbini amane omKhathilibe.

Yize singakwazi ukuwunuka umkhathilibe ngqo, siyakwazi ukucabanga ukuthi unuka kanjani ngokuhlonza imizwayi etholakala kuwo, ngokuba siyayazi lemizwayi ukuthi inuka kankani lapha emhlabeni.



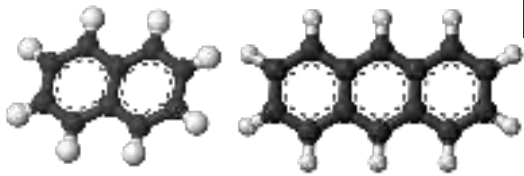
Ngenhla: ALMA, kuGwadule lase-Atacama eShile. Lawa amadlebe aqoqa amagagasi anebangacuphi elingama milimitha ubude, aphinde ahlunge imizwayi emkhathini.



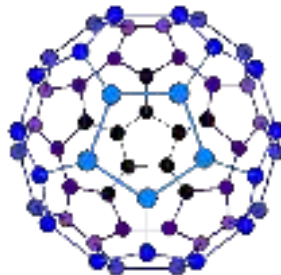
kusuka kwesinxele kuya kwesokudla: Imvundeli, Inukasasbabuli, iLamunya, umafusini kanye noMeikhapha. TAmabili okuqala anukiswa okeqanda elibolile kanye noManyolo, ngokulandelana kwawo. Lapho ijiye khona ingadala ukuphalaza, umkhawu wamehlo, noma kuholele ekuweni kwamaPhaphu. ILamunya linukisa okweNhlanzi ebolile, kanti umafusini unukisa okwaGaliga, kanti uMelikhapha unephunga elibi ngempela: elihlanganisa lelikaGaliga, u-anyanyisi, ishaladi, kanye neklabishi elibilisiwe. Le mizwayi seyatholakala ezindaweni ezahlukene kuMkhathilibe, okubalwa kuyo imiZulane, amafu ekudaleka kuwo iziNkanyezi, kanye noBhaqanyezi. 4

Kwesokudla: isishomo iMpambano. Iklobo elibovu likhafuwa imizwayi yoMcalahwanzi omaphunga

Ngenzansi: Eminye imizwayi yomcalahle eseyaphakanyiswa okubalwa kuyo inafuthalini kanye ne-antilasini, enukisa okwetiyela. Yomibili yahlonzwa kwifu kwisiShomo iPerseus, cishe ama-700 ebangakukhanya kude kunoNomkhubulwane.



Kwesokudlat: amaFulayini awuhlobo lomcalahle oluzelezile. Yize kunzima ukuwathola kuNomkhubulwane, asibhidlibhidli kwisigcawu somkhathini.



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Uhume Lemizwayi Yomcalahle

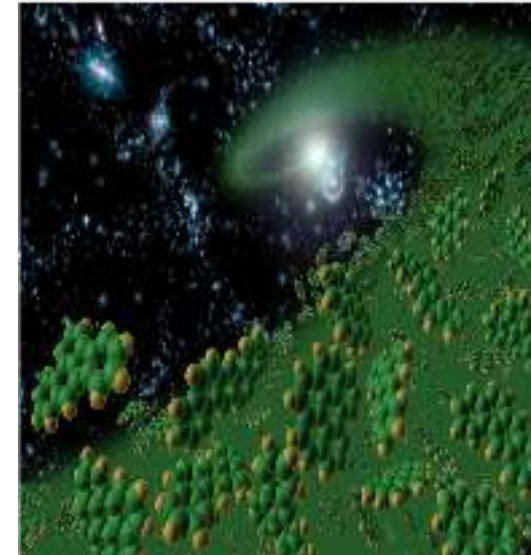
ImiZwayi eyakhiwe ngamachwe omCalahle asetholakale kuwona wonke amagumbi omKhathilibe: izicaba zomsukamhlaba, iziNkanyezi ezishintshile, imiThalakazi, imiZulane, iziNyanga, nakwezinye izindawo.

amaningi ayaxhifika kuwona wonke ilawo abizwa ngemicalahwanzi emaphunga Emhlabeni, lena itholakala kwizikhafulo zezimoto kanye nakuThosi. Inukisa okwento eshile kanti futhi ziyagulisa.

Kwesokudla:

Imcalahwanzi emaphunga awuhume lemiZwayi emi kuhle kwezindandatho, enziwe ngomcalahle kanye neHwanzi.

Atholakala cishe yonke indawo lapho sikhomba khona izipopolo zethu zomkhathi.



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kwesokudla: IsiThombe seNdonsa esathwetshulwa iTilosi lomkhathi iVoyager ngowe-1979. imibala ifakelwe ukucacisa imniningwane thizeni ebusweni balomzulane.



kwisinxele: Umdwebo womoya weNdonsa, odwetshwe uDon Dixon.

INdonsa iyisihhuhha ngokuba: iphunga layo lushintsha ngeqeqeba neqeqeba lomoya okulona.

uqeqeba olukuphiko lunukisa okweNhlanzi ebolile, ngokuthi imizwayi yeLamunya miningi.

Ekuhambeni kwesikhathi, iphunga leNhlanzi lixubana nalelo elamaManda abolileyo, ngoba IMvundeli nalo lusuke lukhona.

Ekugcineni, sihlunga iphunga lezilowezane elimuncu, eliqhamuka kusayanidi.

kuye kube khona nephunga likaGaliga ngenxa kaMafusini otholakala kulomZulane omkhulu kangaka.

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ImiZwayo enganuki

umJawane utholakala emimoyeni yemiZulane emubalwa (iNdonsa, uNomakhekheba, uNomaxhama kanye no noLundwa), kwiziBhaqanyezi (i-67P/i-Churyumov-Gerasimenko), kanye nakwi inyanga enkulukazi kaNomaxhama (iSazi). UMjawane ungaba nesizinda sejiyoloji noma seMpilo.

Lo moya awunaphunga. Ngabe kuyakwethusa lokho? umJwane(njengo Bhutne) awunaphunga. Mbala, amathangi egesi yokupheka kunezelwa ngobuyoyi obunuka phu ukuze abantu bezokwazi ukukunuka lapho ivuza khona.

IziFundama (iHwelanga, iNkanyiwe, isAlawe,...), kanye noNashabi kanye naManzi, eminye yemiZwayi engenanuki. INaside ikhona emoyeni womzulane iHD189733b. Ayinaphunga, kodwa ishisa iso lezikhwehlela emakhaleni ethu, okudala ubuhlungu. 9

UMnsali B2 Isintshongo esinesisindo esiphindeke cishe izigidi ezintathathu kweseLanga kanti futhi isisindo saso esilinganiselwe kwi-150 kwibangakukhanya. Sitholakala kwindeni eduza koMzilafasimbe.

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



Mhlawumbe imizwayi yamadlingozi etholakala kulesi isintshongo ielyo yeThabathi, ekhiqizeka lapho isimunyu sezintuthane (esitholakala kubuthi bezintuthane) ininana noTshwala. IThabathi linuka kuhle kweHumuli kanti futhi lizwakalisa okwomvokwane. Ekugineni, iphunga elimtnandi kumKhathilibe.

INyama ethosiwe noma umkhafulo weMoto

KunomCalahle omuningi ukudlula isihowe kuhlelo lweLanga. Ukube siyakwazi ukuwunuka, ngabe unukisa okomule noma intuthu kadizili ephuma emotweni.



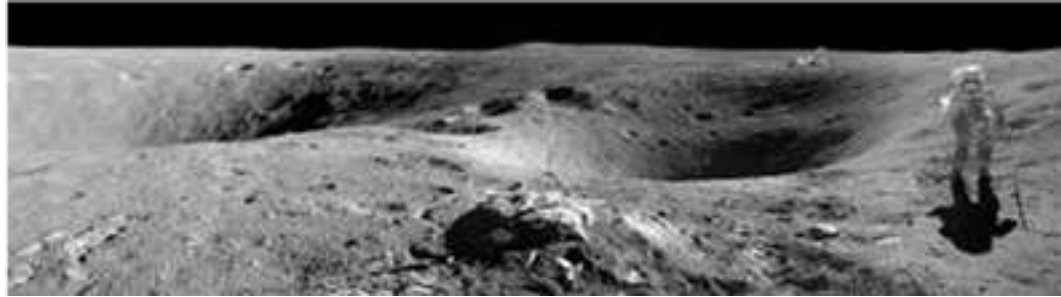
Umdwebo weLanga, imiZulane, iziNyanga zayo, uBhaqanyezi, kanye nemiHlabana eyakha uHlelo lweLanga.

KwiziDangazeli ezisondelene neziNkanyezi ezijiye ngesihowe, isibonelo kwisiDangazeli iM2-48, iphunga lakhona lingafana nalelo leNyama eyosiwe.



IsiThombe sesiDangazeli esijiye ngesihowe iM2-48.

Inuka kanjani iNyanga?



IsiThombe seNyanga nomTilosi womkhathi nkathinye yeThumelo lwasemkhathini lweNASA lwe-Apollo 16.

AbaTilosi bomkhathi uma benuka isifanekiso esisha soThuli lweNyanga bathi lunukisa okomSizi oshile. Kodwa luthi lungabuyiswa lapha eMhlabeni, iphunga lomSizi oshile liyashabalala. Akekho owaziyo isizathu salokhu ukushabalala.

UBuso beNyanga bakhiwe umncwebe wesihlabathi (owalethwa iziQhumanyezi ezamihlizeka ebusweni benyanga emasukwini ayo) kanye neNsimbi, uMcaphane kanye noMgethe. Akukho ngisho neyodwa kulezi enukisa okomSizi, wona owenziwe ngovoyizane wetshe, uMcalahle kanye nesiBabuli.

Ngabe uMkhathilibe Unuka Ngempela?

Amakhala ethu adinga ingcosana yemizwayi ukuze ezwe iphunga.

Ulanqi (isibalo semizwayi kumqumbu munye) kuMkhathilibe luncane ukudlula lelo elutholakala eMhlabeni.

Ukuze sibe nemizwayi elinganayo, singadinga ukuba noMqumbu omukhulu kuMkhathilibe ukudlula loyo oseMhlabeni, kanti futhi singadinga ikhala elikhulu impela lapho kuzongena khona imiZwayi.

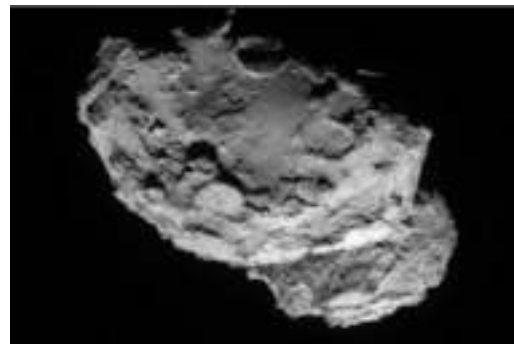
Ngokwemfundindalo yomkhathi yaseMekisikho uDaniel Tafoya, ukuze sikwazi ukunuka iLamunya elikwifu le Mpambano-KL, singadinga ukuba amakhilomitha ayi-1 1.4 km ubude (ukugcina ubulingani phakathi kwekhala nobude).

Imibuzo



Ukube siyakwazi ukuphefumula umoya walo, uHlelo lweLanga belonkisa okoMule kanye nomkhafulo kaDizili.

AbaTilosi bomkhathi asebake bahamba ebusweni beNyanga bathi okomsizi oshile.



Zinukisa okwani lezi izinto?

Ngaphandle, iNdonsa inganukisa okweNhlanzi ebolile. uma uqhubeka, inganukisa okwamaQanda abolile. mawuqhubeka futhi, inganukisa okweLowezane.

UBhaqanyezi iChuri lunganukisa okwamaQanda abolile, inhlanzi ebolile, ugaliga kanye neklabishi elibilisiwe.



Izimpendulo zingemuva

Isaluthe seMpambano siqukethe imiZwayi yomcalahwanzi omaphunga etholakala kumkhafulo wezimoto emhlabeni

UMkhathilibe Ephaketheni Lami No. 7

Le Ncwajana ilotshwe ngonyaka wezi-2017 ilotshwa nguGloria Delgado Inglada wase-Astronomy Institute of the National Autonomous University of Mexico yase iningilizwa nguStan Kurtz wase-UNAM Radio Astronomy Institute in Morelia (eMekisikho).

IsiThombe sale Ncwajana siqhamuka kwiNASA, i-ESA kanye nakuquketho zithombe lweziPopolo zomkhathi iHubble, noma ziyatholakala kwisidlangala somphakathi.



Uma ufisa ukufunda kabanzi ngalolu uchungechunge kanye nezihloko ezethulwe kuleNcwajana, sicela uvakashele u:

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