

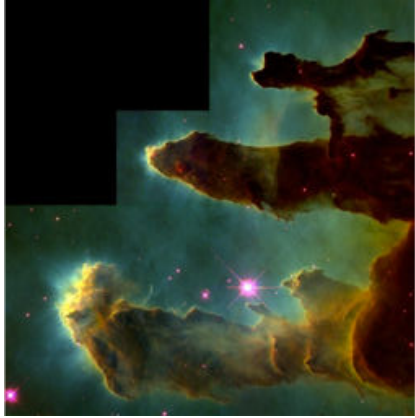
Lapho kudaleka khona izinkanyezi  
Izinkanyezi azingunaphakade:  
Njengabantu, ziyazalwa  
(ziyadaleka), ziguququke,  
beseziyafa.  
Zidaleka emafini asiluvuluva  
amakhulu, ngezindlela  
ezingaqondakali kahlehe.  
Lezindlela zibandakanya  
imfingqoNtanda, okwevumela utho  
ukuthi ifinyelele kwisiluthu  
esiphezulu esitholakala phakathi  
emathunjini ezinkanyezi.  
Ezinye zalezizinkanyezi ezisanda  
kuzalwa (kudaleka) zishisa  
ngalendlela yokuthi zikwazi ukususwa  
izinxelisi kumaChwe kulamafu  
ezizalelwe kuwona, okudala amafu  
aHonyozekile njenge-Orion.

Amafufu aluthuli i- Horsehead nebula.  
Yakhiwe ngemizwayi exutshwe nomoya.



IsiDangazela  
Izinkanyezi ezinesisindo esilingana  
neselanga zifa ngendlela ezolile.  
Ziyakhukhumala ngosayizi,  
zilahlekelwe ubuhlalazi  
bangaphandle, obukhanyiswa  
izinsalela zeNkanyezi, okudala lokhu  
esikubona njengesisiDangazela.  
Igama elithi « planetary nebulae  
(isiDangazela) » laqanjwa ngu-  
William Herschel ngonyaka we-  
1785 ukuchaza lezisiDangazela  
ngoba zazibukeka njengemihlabha  
ezifopweni zakhe zoMkhathi.  
Wagcina ezisola ngokungazibizi nge-  
« stellar nebulae ».

UmQongo i-Helix planetary nebula.  
Lena enye yemQonga esondelene  
noNomkhubulwana ezaziwayo. Ukukhanya  
okuphafuzwa lioMqongo kuthatha  
iminyaka engama-700 ukufika  
kuNomkhubulwana (kanti ukukhanya  
okuwenka eLangeni kuthatha imizuzu eyisi-  
8)



Ingxenye yamafu aluthuli i-M16, ebizwa  
nge « Pillars of creation ».

Kusemafini anjengalawa lapho kudaleka  
khona izinkanyezi ezintsha.

#### Amafufu aluthuli

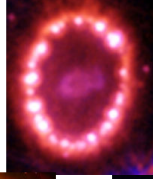
Ezithombeni zemiqongo kanye  
nemiThalakazi, kuye kubonakale  
izindawo ezimnyama. Lezizindawo  
zakhiwa ukuqoqelana kwemizwayi  
yothunqathunqaba phakathi  
kwezinkanyezi.

Lemizwayi, engabonakali ngamhlo  
eyakhiwe ngoHoyana leCalahle  
noma leSiphemba olumkhumanqa,  
igwinqa impekumpeku kwiWigo  
elibonakalayo kwizinkanyezi  
ezisondelene nayo.

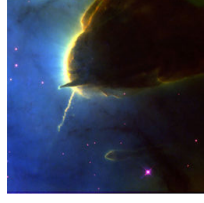
Ngenkathi amazanga abo okushisa  
ehla, bakhapha ukukhanya  
okungabonakali ngamhlo kodwa  
okukwazi ukuhlungwa iziPopolo  
zoMkhathi ezakhelwe ukuhlonga  
lengxenye yeWigo.



Uyazibona lezi  
zinhlobo  
zemiqongo?



#### Imibuzo



Izimpendulo  
zitholokala ku-  
overleaf

UMkhathilibe Ephaketheni Lami



UMkhathilibe osamQonga



Grazyna Stasińska  
Paris Observatory

Amafu aluthuthi i-Orion, lwona akhanya kakhulu ukudlula amanye amafu emkhathini, kanti futhi akwazi ukubonakala nangamhelo.



The Unicorn: Ingxenye ye-Trifid nebula esithwe uthungathunga.



M 17, Amafu asilavulavu lapho kudaleka khona izinkanyezi.



IsiDangazela i-IC 4-18, esibizwa nge « spirograph nebula ».



IsiDangazeleka zi i- SN 1987A.



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Uma ufuna ukufunda kabanzi ngaloluChungechunge kanye nezihloko ezethulwe kuleNcwajana, sicela uvakashele u- <http://www.tumipona.net>

Umkhathilibe Ephaketheni Lami woku-1 Letchwajana yabhalwa ngonyaka wez-2013, ibhalwa ngu-Grazyna Strażnińska wase Paris Observatory (France) yaphinde yaningilizwa ngu-Stan Kurtz wase-UNAM Radio Astronomy Institute e-Morelia (Mexico). Inikelelwe kwizingane zesikole i-Choroni (Venezuela) kanye nemindeni yazo.

Sonke sesike sazibuka iziNkanyezi ebusuku. Zibukeka sengathi ziqhinqiswe ebumnyameni bomkhathili Lokhu kuyinkohliso nje. Akukho linya phakathi kweziNkanyezi, kepha kuno klibidibi loHoyana, amaChwe, kanye nobumbanomaChwe. Inani eliyizigidi noma izigidigidi elifukamelwe kwi mitha ntathu elilodwa. Lamahoyana athuthuleka phakathi neziNkanyezi kumafu aluthuthu. Lamafu aluffifi kanti amubalwa abonakala ngamhelo.

Ngosizo lwezifopolo zomkhathi ezinkulu lapha emhlabeni kanye naseMkhathini, abafundindalo bomkhathi bakwazi ukubona ubunotho bemqongo yomkhathilibe kanye nokufafaza izithombe ezinle zalemqongo.



Umqongo oqanjwe nge-Crab (iNkhalankala). Lezi izinsalela zesiDangazela kazi ukuqhuba kwaso kwaqoshwa abafundindalo bomkhathi base China ngonyaka we-1054.

### ImiThalakazi

ImiThalakazi iyisicakacolo sezinkanyezi esingaquketha izinkanyezi ezilinganiselwe kwikhulu lezigidigidi. Ezinye zazo, lezo eziyingoqela noma eziyiqayinga, nazo ziziqethe inani eliningi lezithungathunga. LemiThalakazi isadala izinkanyezi, kanti futhi iqukethe izinkanyezi « ezintsha » ezineminyaka elinganiselwe kwizigidi ezimubalwa. Eminye imiThalakazi, leyo isimo sayo esisaBhola lombhoxo, ayisazidali izinkanyezi. Zonke izinkanyezi zayo sezigugile, ezinye zazo zineminyaka elinganiselwa kwi-10 lezigidigidi ubudala. Kudala imiThalakazi yayibizwa « ngemqongo » ngenxa yokuthi kwakungakaziwa ukuthi zazakhiwe isicakacolo sezinkanyezi.



UmiThalakazi i-Spiral galaxy M101. LomiThalakazi uyafana noMzila fasimbe. Ezingalweni eziyingoqela, kuyilapho kudaleka khona izizukulwane ezintsha zezinkanyezi. Kuqukethomagama lemFundandalo yomkhathi yase France u-Charles Messier olafafazwa ngonyaka we-1781, lomiThalakazi uchazwe « njengomqongo ongenakanyezi, olufiphi & ornukhulu impela ».

### Izinsalela zesiDangazela kazi

INkanyezi enesisindo esikhulu ifa ngokuqhuba okunamandla. Abafundindalo bomkhathi bakubiza lokhu ngokuthi « isiDangazela kazi », ngokuba babezitshele ukuthi babebona ukuzalwa (ukudaleka) kweNkanyezi entsha endaweni lapho khona kwakungekho Nkanyezi. Sesiya zi manje ukuthi isiDangazela kazi kusuke kuwukufa kweNkanyezi, lapho khona iphalalisa emkhathini lokho esuke ikwakhile empi lweni yayo.

Izinsalela zesiDangazela kazi ziyimqongo, okuyilokhu okusalela ngemuva kokweqhuba.