Sidee baa Qaaraduhu ay ku Samaysmeen?

W/Q: Cabdikariim Sh Bashiir
Juun 7, 2024

1. Hordhac

Sannadkii 1912, cimiloyaqaankii iyo jiyoolajistigii Jarmalkaa ahaa ee Alfedh Wiignar (Alferd Wegener; ألفريد فيغنر) waxa uu soo gudbiyay aragti uu ku magacaabay Kaladurugga Qaaradaha (Continental Drif Theory ; نظرية الإنجراف القاري), taas oo dhigaysa in qaaraduhu ay 250 milyan oo sano ka hor ahaayeen qaarad qudha oo hal badweyn leh oo uu u bixiyay Beenjiya (Pangaea; بانجيا), kaddibna ay kala googo'day ilaa qaaradaha hadda jiraa ay ka soo baxeen. “Pangaea” waa erey Giriig ah oo is ka saaran “pan” oo “dhammaan” ah iyo “gaea” oo “dhulka” ah, markaana macnihiisu waxa uu noqonayaa “dhulka oo dhan”.

Beenjiya (Pangaea; بانجيا)

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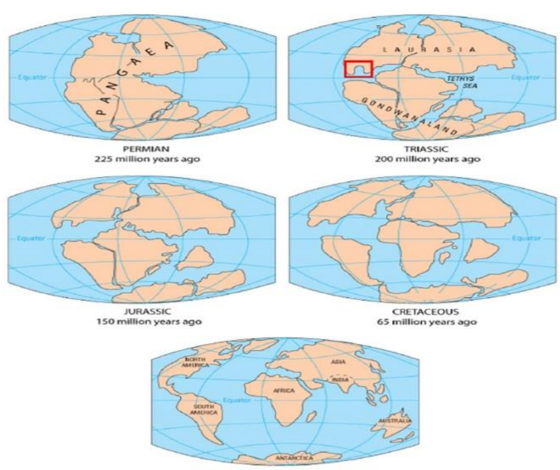
2024

2. Sooyaalka Qaaradaha

Markii u horraysay, 175 milyan oo sano ka hor oo ku beegmaysa casrigii Juraasigga (Jurassic Period; العصر الجوارسي), ayaa qaaraddii Beenjiya ay u kala go'day laba qaaradood oo waaweyn oo waqooyi iyo koonfur ah, kuwaas oo kala ah Ganduwaana (Gondwana; جندوانا) iyo Luraasia (Laurasia; لوراسيا). Luraasiya waxa ay ka koobnayd Ameerikada Waqooyi iyo Uraasiya, ka dibna Ameerikada Waqooyi ayaa si kamadambays ah Luraasiya uga go'day 140 milyan oo sano ka hor, Uraasiyana laba ayay u sii kala jabtay oo waxa ay noqotay Aasiya iyo Yurub.

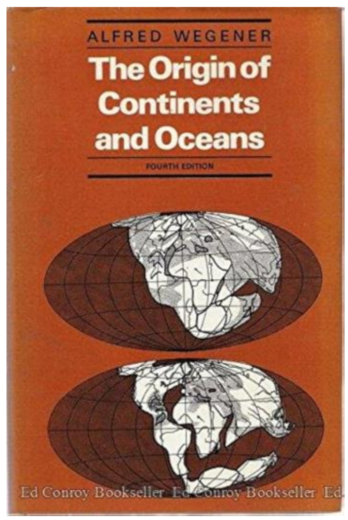
Dhanka kale, Ganduwaana oo Afrika, Ameerikada Koonfureed, Ustareelliya, Hindiya iyo Cidhifka Koonfureed ka koobnaydna ay Ameerikada Koonfureed 140 – 130 milyan oo sano ka hor oo noqanaysa casrigii Kiritayshaska (Cretaceous period; العصر الطباشيري) ka go'day Afrika, is la carsigaa dabayaaqadiisiina Hindiya ayaa billowday in ay ka go'do Cidhifka Koonfureed, ilaa ugu dambayn ay ku darsantay Aasiya. Ustareeelliyana 120 milyan oo sano ka hor ayay bilowday in ay ka go'do Cidhifka Koonfureed, ilaa 45 milyan oo sano ka hor ay si kamadambays ah uga go'day.



Jaantus muujinaya sidii Qaaraddii Beenjiya ay u kala googo'day, laga soo bilaabo 225 milyan oo sano kahor ilaa maanta.

2. Muxuu Wiignar u cuskaday aragtidiisa?

Sannadkii 1915, ayaa Alfedh Wiignar uu faafiyay buuggiisa caanka ah ee Asalka Qaaradaha iyo Badweynnada (The Origin of Continents and Oceans; أصل القارات والمحيطات), isaga oo ku xusay caddaymo saynis oo dhowr ah oo uu ku xoojinayo aragtidiisan curdinka ah, taas oo toddobaataneeyada qarniga 20aad dhexdiisa noqon doonta kacdoon jiyoolaji oo la mid ah kacdoonkii cilmiga Falagga ee Nikolaas Kobarniikos (Nicolaus Copernicus) iyo kii cilmiga Bayoolajiga ee Jaarles Daarwin.

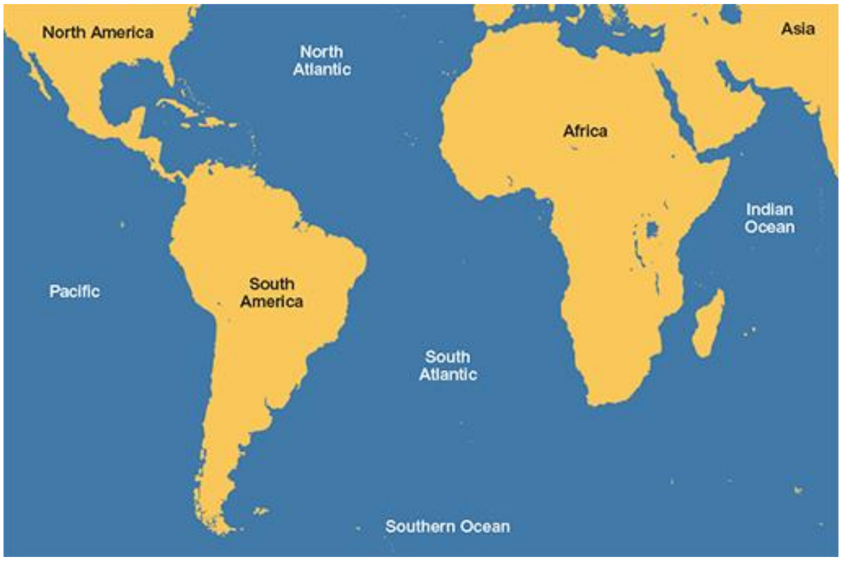


Alfedh Wiignar, “Asalka Qaaradaha iyo Badweynnada”

2. 1 Caddaymaha Juquraafiyeed

Caddaymaha saynis ee Alfedh Wiignar uu cuskaday waxaa ka mid ahaa: in marka la eego khariidadda qaaraduhu sida ay u samaysan yihiin ay is leeyihiin, oo haddii dib la is kugu celiyo hal qaarad oo is ku dhammaystirani ay soo baxayso; markaana ay u muuqato in beri hore ay dhab ahaan is ku dhegsanaayeen oo dib ay ka kala googo’een, sida tusaale ahaan Bariga Ameerikada Koonfureed iyo Galbeedka Afrika.

Waxaanu Wiignar ku dooday, in is lahaanshahani aanu sudfo ama kedis ahayn, ee uu u baahan yahay fasir, aragtidiisuna ay fasiri karto.



Islahaanshaha labada qaaradood ee Afrika iyo Ameerikada Koonfureed

2. 2 Caddaymaha Qalfoofeed

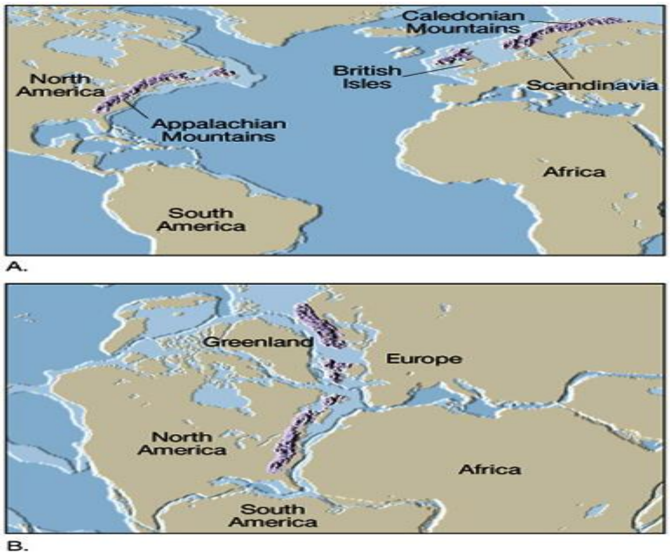
Sidoo kale, Alfedh Wiignar waxa uu qaarado kala duwan ka helay qalfoofyo noolayaal iyo kuwo dhir ah oo is ku xilli u noqonaya, badweynnadana aan is kaga gooshi karin, kuwaas oo u muuqda in berri hore ay is ku hal meel ku noolaayeen laakiin dhaqdhaqaaqa qaaradaha awgii midkoodba qaarad laga helay.

Tusaale ahaan, Mesasooras (Mesosaurus; ميسوصور) waa noole xamaaratada ka mid ah oo biyo-ku-nool ahaa sida yaxaaska oo noolaa intii u dhexaysay 299 – 280 milyan oo sano ka hor oo noqonaysa horraantii casrigii Bermiyaanka (Permian period; العصر البرمي), waxaana qalfoofkiisa laga helay Ameerikada Koonfureed iyo Afrika labadaba, taas oo xoojinaysa in labadan qaaradood ay markii hore is ku dhejisnaayeen oo noolahanina uu ku wada noolaa.

Meesasooras

2. 3 Caddaymaha Jiyoolajiyeed

Dhanka cilmiga Jiyoolajiga, Alfedh Wiignar waxa uu arkay silsilad buureedyo laba qaaradood ku kala yaalla oo isku dhagaxyo, macdan, qaabdhismeed iyo cimri ah, kuwaas oo u muuqda in waa hore ay xidhiidhsanaayeen, sida tusaale ahaan silsilad buureedda Abalaaj (Appalachian mountains) ee Ameerikada Waqooyi iyo buuraha Kalidooniya (caledonian) ee Britishka iyo Norwey dhaca.



Buuraha Abalaaj iyo Kalidooniya, sida hadda ay yihiin (jaantuuska A ee kore) iyo sidii ay waagii hore ahaayeen (jaantuuska B ee hoose)

2. 4 Caddaymaha Cimileed

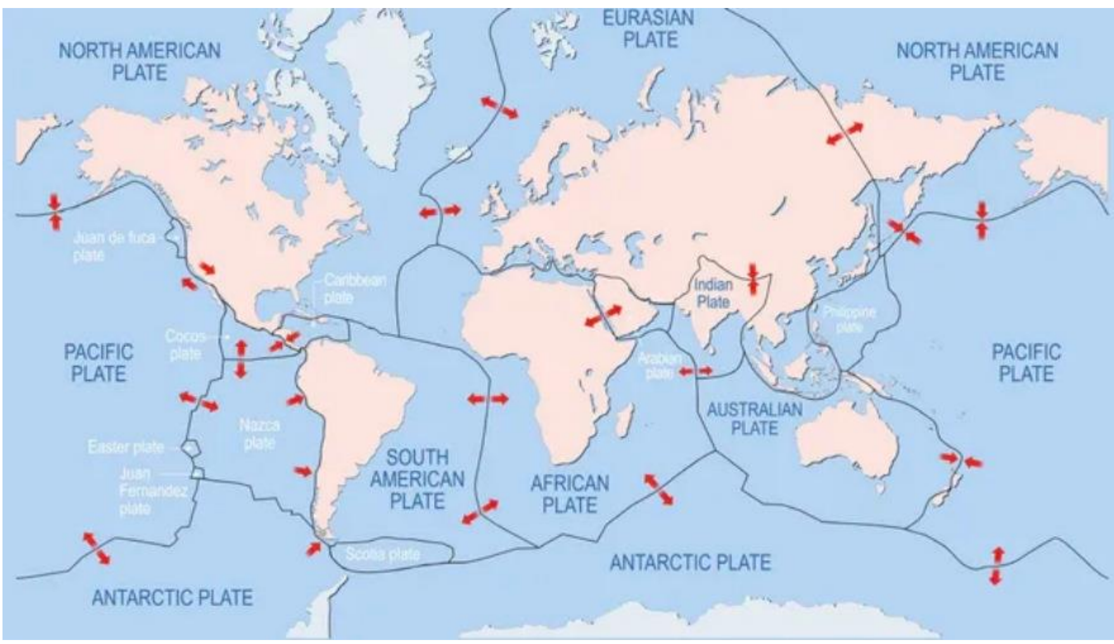
Dhanka Cimiladana, Wiignar waxa uu arkay iskuraranno baraf ah (glacial sediments; رواسب جليدية) oo ku yaalla goobo cimiladoodu ay dhexdhexaad ama istiwaa'i tahay, taas oo muujinaysa in markii hore goobahani ay meelo qaboobe ah ay ku yaalleen laakiin dhaqdhaqaaqa qaaradaha awgii meeshan hadda ee kulul ay yimaaddeen. Tusaale ahaan, waxa Afirka, Ameerikada Koonfureed, Hindiya iyo Ustareelliya laga helay iskuraranno baraf ah oo u noqonaya casrigii Bermiyaanka, taas oo muujinaysa in ay is ku dhegsanaayeen casrigaa oo goobo is ku cimilo ah ay ahaayeen.

3. Diidmadii iyo wejiqabaxii uu kala kulmay saynsisyahannada Jiyoolajiga

Tiiyoo caddaymahaas saynis uu Alfedh Wiignar soo bandhigay, haddana nasiibadarro saynisyahannada Jiyoolajiga ka la ma aanu kulmin aqbalaad hor leh, sababtuna waxa ay ahayd in uu sheegi waayay waxa sababi kara in qaarad dhami ay dhaqaaqdo. Mar waxa uu ku sheegay wareegga dhulka, kaasina tafsiir lagu qanci karo ma noqon. Waxaana ay gaadhay heer Wegener lagu tuhmayba in uu waalan yahay ama xanuun maskaxeed qabo, ilaa 1930kii uu ku geeryooday isaga oo 50 jir ah safar-shaqo oo halis badnaa oo Greenland isaga iyo saaxiibbadii ay ku tageen si ay ugu soo xidhaan qalabyo laga la socdo cimilada gobolkaas. Waxaana sababay geeridiisa qabowgii aadka u darnaa ee dhacayay oo la sheegayba in uu gaadhay -60°, meydkiisana waxa lix bilood ka dib geeridiisii bishii May 12, 1931 laga helay waddada dhexdeeda.

4. Maxaa keena kala go’idda Qaaradaha?

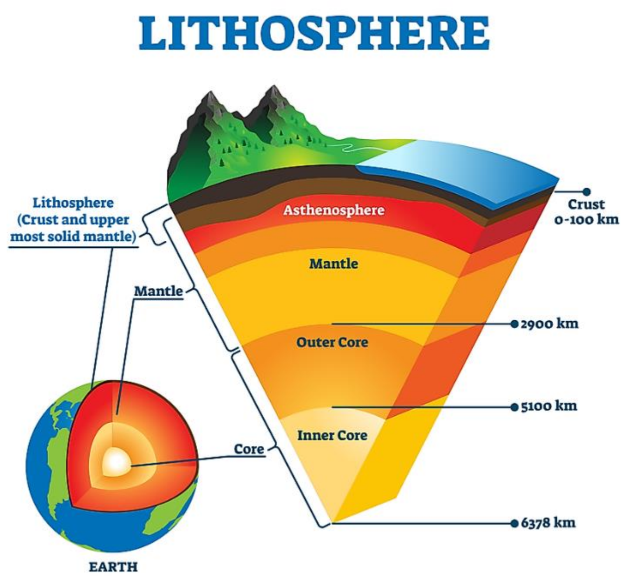
Toddobaataneeyadii qarnigii 20aad, waxa saynsiyahannada Jiyoolajigu ay ogaadeen in lakabka Mantelka gaar ahaan qaybta u sarraysa ee Lithosphere-ta ee qalfoofka dhulka (earth crust) soo xigtaa ay ka kooban tahay waaxyo loo bixiyay saxanno (plates; ألواح), oo toddoba waaweyn iyo qaar yaryar oo soo hoosgala isugu jira, kuwaas oo ay ugu waaweyn yihiin toddobo saxan oo kala ah: Saxanka Baasifiga, Saxanka Antaraktika, Saxanka Uraasiya, Saxanka Ustaraalliya, Saxanka Afrika, Saxanka Koonfur-Ameerika iyo Saxanka Waqooyi-Ameerika, waxaana loo bixiyay Saxannadda Tiktoonigga (Tectonic plates; الألواح أو الصفائح التكتونية)



Saxannada Tiktoonigga (Tectonic plates; الألواح أو الصفائح التكتونية)

Kaddibna waxaa la ogaaday, in saxannadani ay ku jiraan dhaqaaq joogto ah oo ay sababayaan qulqulka kuleed (convection current; التيارات الحرارية) ee ka jira lakabka Mantelka ee ka imanaya ubucda dhulka (inner core) ee aadku u kulul, kuwaas oo awood u leh in ay dhalaaliyaan dhadhaabyada qolofta dhulka oo ay kala googooyaan, waana kuwa ka dambeeya in qaaraduhu ay kala googo’aan ama is ku darsamaan.

Dabcan dhaqaaqani ma aha mid weyn oo la dareemayo, ee sannadkii ugu badnaan dhawr sentimitir ayaa laga yaabaa in uu noqdo.



Lakabyada dhulka (Earth’s layers; طبقات الأرض)

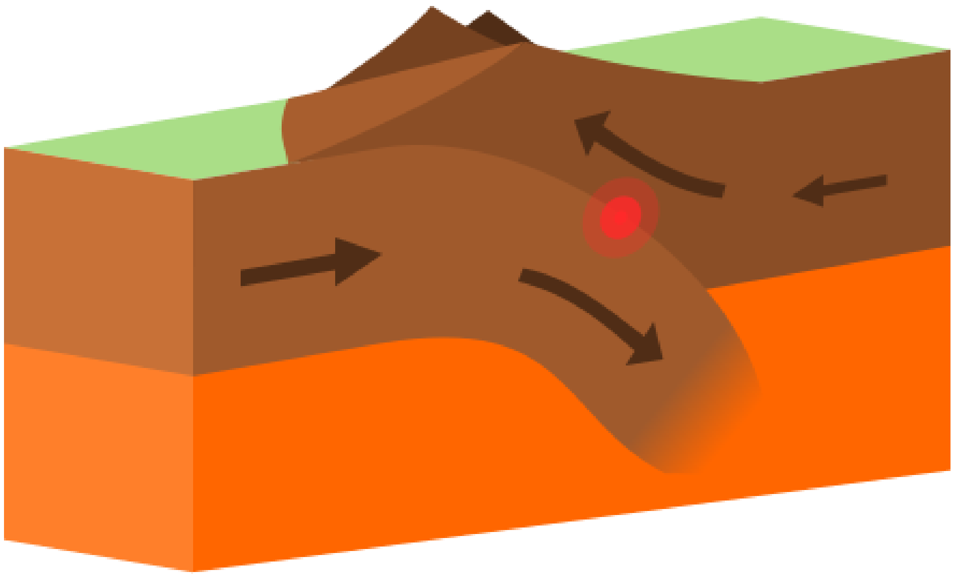
5. Noocyada Dhaqaaq ee Saxannada

Haddaba, saxannadani waxa ay sameeyaan saddex nooc oo dhaqaaq ah: is-hirdin (convergent), kala durug (divergent) iyo isweydaarasho (transform).

5. 1 Is-hirdin (convergent; تقارب)

Is-hirdin, waa marka laba saxan ay madaxa is la galaan sidii laba gaadhi oo is ku dhacay, waxaana halkaa ka samaysma haddii labada saxan laba berri ay yihiin silsilad buureedyo. Tusaale ahaan, silsilad-buureedda Himilaaya waxa ay ka samaysantay 50 milyan oo sano ka hor isku-dhaca

laba saxan oo kala ah Saxanka Hindiya iyo ka Uraasiya, ilaa haddana buurta Ifiristi ee adduunka ugu dheer ee silsilad buureedda Himilaaya ku taalla waxa sannadkiiba dhererkeedu ku kordha hal ilaa laba sentimitir, is-hirdankaa awgii.

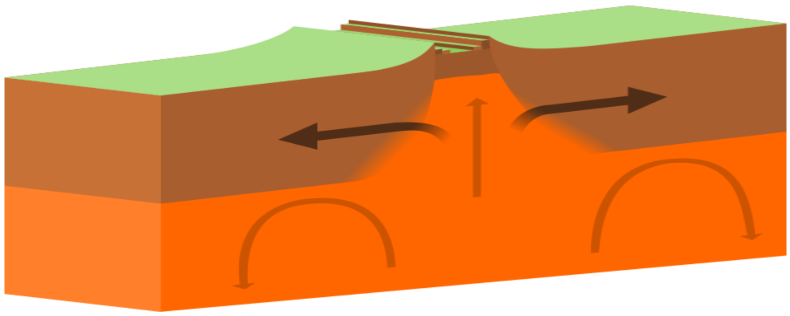


Is-hirdin (Convergent boundary)

5. 2 Kaladurug (Divergent; تباعد)

Kaladurug, waa marka laba saxan ay laba jiho oo is ka soo horjeeda ay u kala dhaqaaqaan, ee midina bari u dhaqaaqdo midina galbeed tusaale ahaan. Waxaana halkaa ay ka kala dhaqaaqeen ku samaysma haddii labada saxan ay berri yihiin jeexjeexyo waaweyn. Tusaale ahaan, dooxada weyn ee East African Rift Valley waxa ay ka samaysantay kala dhaqaaqa laba saxan oo kala ah Saxanka Afrika iyo Saxanka Soomaaliyeed oo isna qayb ka mid ah Saxanka Afrika lagu tiriyo. Haddii labada saxan ay laba badood kala yihiinna waxa halkaa ay ka kala dhaqaaqeen ka samaysma silsilad buureedyo salka badda ah, mararka qaarna waxa ka soo baxa fulkaanooyin, ka dibna waxa ay ku qaboobaan korka badda; halkaana

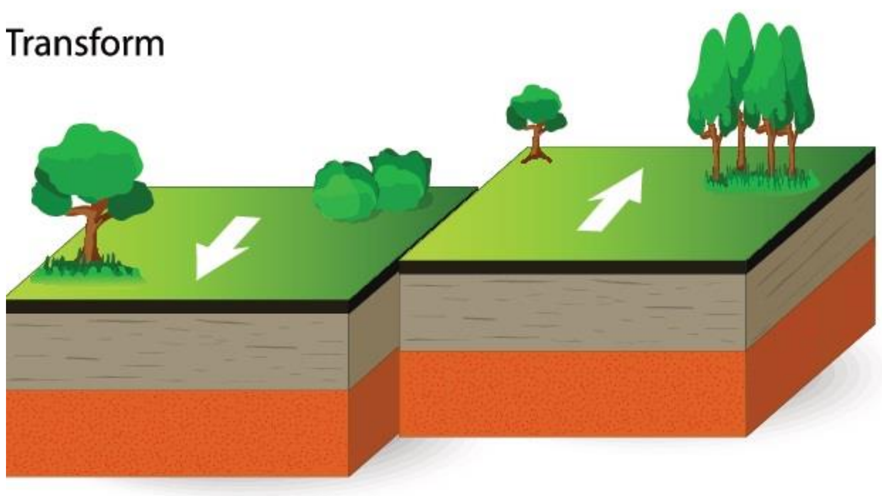
waxa ka samaysma jasiirad cusub, waana sida jasiiradda Surtsey ay ku samaysantay.



Kaladurug (Divergent boundary)

5. 3 Isweydaarasho (transform; إنزلاق)

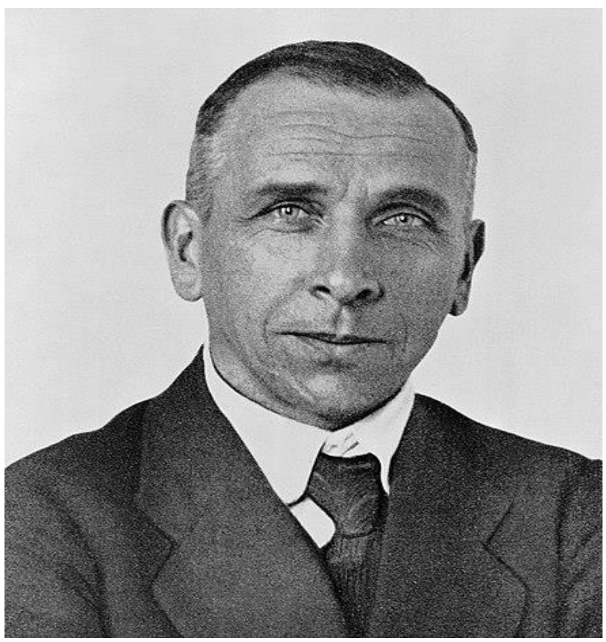
Isweydaarasho, waa marka laba saxan oo dhinaca is ku hayaa uu midina hore u dhaqaaqo midina dib tusaale ahaan, ee janbiyada ay is ku xoqaan. Markan waxa ka dhasha haddii labada saxan ay laba berri yihiin dhulgariirro waaweyn. Tusaale ahaan, dhulgariirkii baaxadda weynaa ee October 30, 2020 ku dhuftay magaalada İzmir ee dalka Turkigu waxa uu ka dhashay isweydaarashada Saxanka Afrika iyo Saxanka Yurub, waxaanu sababay dhimasho, dhaawac iyo burbur baaxad weyn.



Isweydaarasho (Transform boundary)

8. Gunaanad

Markii saynsisyahannada Jiyoolajigu ay ka warheleen saxannadan iyo dhaqaaqooda, ayaa ay ogaadeen sababta ka dambaysa dhaqaaqa qaaradaha iyo kala go'ooda, markaas ayaana ay si kamadambays ah u aqbaleen aragtidii uu Alfedh Wiignar soo bandhigay afartaneeyo sano ka hor, iyaga oo u aqoonsaday aabbaha mid ka mid ah kacdoon-aqooneedyadii ugu waaweynaa dunida iyo qarnigii 20aad gaar ahaan. Sannadkii 1980kiina, waxa dalka Jarmalka magaciisa lagu aasaasay machad ka hawlgala cilmibaadhista cidhifyada dhulka iyo badda. Intaana waxa dheer, in goobo ka mid ah dayaxa iyo Maaris iyo meere-yareba isaga loogu magacdaray, shahaado cilmiyeed magaciisu uu ku qorayn yahayna la sameeyay.



Alfedh Wiignar (1880 - 1930)

Alferd Wegener (bidix) iyo Villumsen (midig); Noofeembar 1, 1930. Greenland.

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