

NOTIFICATION OF PROPOSED RESEARCH CRUISE**Part A: GENERAL**

1. Name of research ship: RV Pelagia Cruise number: 64PE???

2. Cruise dates: 7-22 July 2011.

3.

3a. Operating authority: NIOZ Royal Netherlands Institute for Sea Research
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674

3b. Operating agent: NIOZ Royal Netherlands Institute for Sea Research
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674

4. Owner: NIOZ Royal Netherlands Institute for Sea Research

5. Particulars of ship:

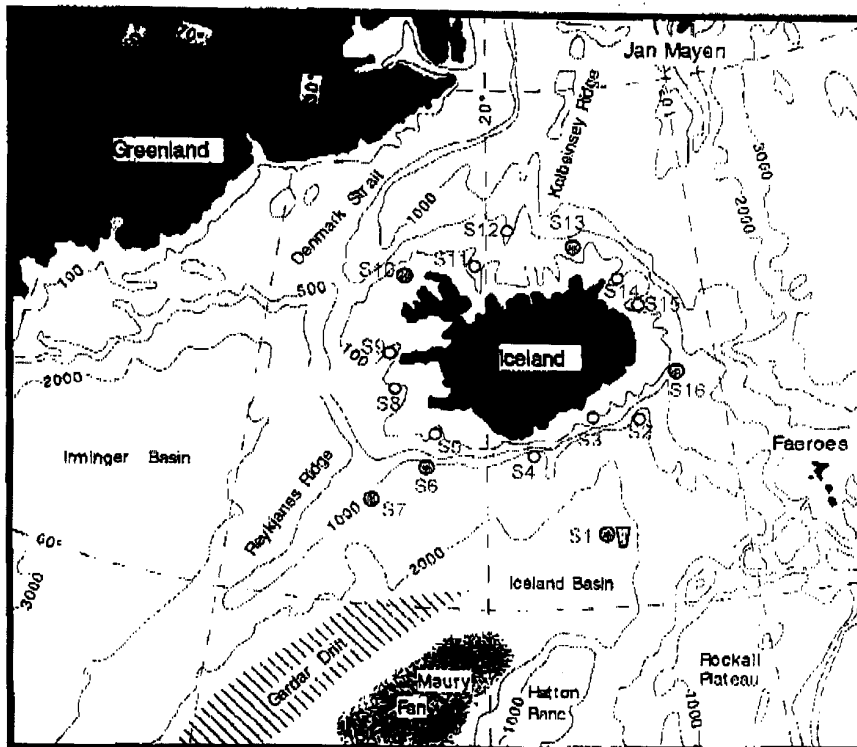
name: Pelagia
nationality: Dutch
overall length: 66.00 meters
maximum draught: 4.00 meters
nett tonnage: 1553 NRT
propulsion: 2 diesel electric Elliot White Gill
Bow Truster
call sign: PGRQ

6. Crew: name of master: J.C. Ellen / I. Burkhard
number of crew: 11

7. Chief scientist: name: Henk de Haas
addresses: Royal NIOZ
P.O. Box 59
1790 AB Den Burg
The Netherlands
telephone: (+31) (0)222 369402
telefax: (+31) (0)222 319674
e-mail address: haas@nioz.nl

**8. Geographical area in which the ship will operate:
(with reference in latitude and longitude)**

The ship will operate in the waters around Iceland, within the Icelandic EEZ. The planned stations are located within the box 61°-68°N/11°-26°W.



Map with proposed stations. Boxcores will be taken at all stations (S1-S16). At the red stations additional CTD and in-situ pump water sampling and piston coring will be carried out. At station S1 a mooring containing two sediment traps will be deployed.

9. Brief description of purpose of cruise:

The cruise is part of a research project called *Sedimentary long-chain, mid-chain diols derived from marine phytoplankton: novel proxies for climate reconstruction*. The project is funded by the Netherlands Organisation for Scientific research (NWO). The aim of this project is to investigate the long-chain diols (natural organic compounds) in marine sediments. These diols can be used to reconstruct past climate changes since the composition of these compounds is known to be influenced by climatic processes. However not much is known about the origin, the diagenesis of these compounds over time, and how their distribution is influenced by temperature, nutrients, etc. During the proposed cruise sediment and water samples will be taken which will be used to determine the factors influencing alterations in the diols and thus to be able to better use these compounds for paleoclimatic reconstructions.

10. Names and dates of intended ports of call:

Departure: Texel (the Netherlands), 7 July 2011.

Arrival: Reykjavik (Iceland), 22 July 2011.

11.Any special logistic requirements at ports of call:
None

Part B: DETAIL

1. **Name of research ship:** RV Pelagia

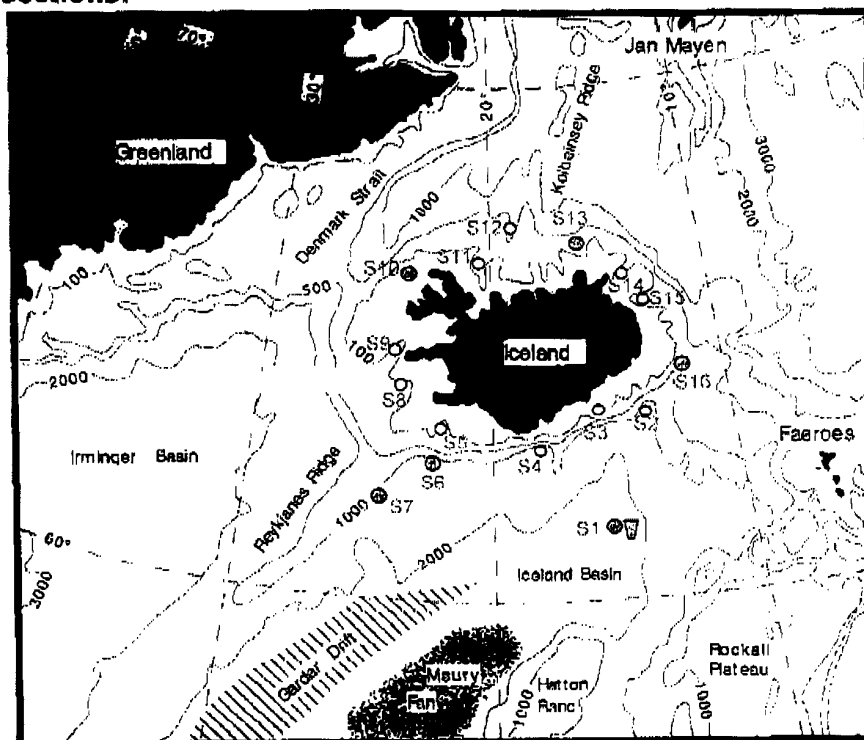
2. **Cruise dates:** 7-22 July 2011

3. **Purpose of research and general operational methods:**

The purpose of the research is to investigate the source and diagenetic alterations of naturally occurring organic compounds called long-chain diols. These compounds known to change composition during changes in climate and can possibly be used for paleoclimatic reconstructions. However the exact source(s) and changes resulting from changes in temperature, nutrient availability, etc. and burial history of these diols are not well known. The aim of the research project is to gain insight into these sources and diagenetic processes with the final goal to develop a tool that uses these compounds as an indicator for climatic changes in the past.

This work will be carried out by biogeochemical analysis of water and sediment samples that are to be obtained within the different water masses present around Iceland.

4. **Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations/hydrographic sections:**



Map with proposed stations. Boxcores will be taken at all stations (S1-S16). At the red stations additional CTD and in-situ pump water sampling and piston coring will be carried out. At station S1 a mooring containing two sediment traps will be deployed.

5

5a. Type of samples required:

Sediment samples

Water mass characteristics (salinity/temperature)

Water samples

5b. Methods by which samples will be obtained (including dredge/core/drill techniques):

Box corer

Piston corer

CTD

In-situ water pump

Sediment trap from a mooring

6. Details of moored equipment:

The mooring will be deployed for a period of 1 year at location 61°15.884'N, 11°09.654'W and will contain two sediment traps (at 200 and 1000 metres below the water surface respectively).

7. Explosives:

None

8. Detail and reference of:

a. Any relevant previous/future cruises:

None.

b. Any previous published research data relating to the proposed cruise:

(Attach separate sheet if necessary)

Sinninghe Damsté, J.S., Rampen, S., Rijpstra, W.I.C., Abbas, B., Muyzer, G., Schouten, S., 2003. A diatomaceous origin for long-chain diols and mid-chain hydroxy methyl alkanates widely occurring in Quaternary marine sediments: Indicators for high nutrient conditions. *Geochimica et Cosmochimica Acta* 67, 1339-1348.

Rampen, S.W., Schouten, S., Konig, E., Brummer, G.-J.A., Sinninghe Damsté, J.S., 2008. A 90 kyr upwelling record from the northwestern Indian Ocean using a novel long-chain diol index. *Earth and Planetary Science Letters* 276, 207-213.

Rampen, S.W., Schouten, S., Schefuß, E., Sinninghe Damsté, J.S., 2009. Impact of temperature on long chain diol and mid-chain hydroxy methyl alkanate composition in *Proboscia* diatoms: Results from culture and field studies. *Organic Geochemistry* 40, 1124-1131.

Willmott, V., Rampen, S.W., Domack, E., Canals, M., Sinninghe Damsté, J.S., Schouten, S., 2010. Holocene changes in *Proboscia* diatom productivity in shelf waters of the north-western Antarctic Peninsula. *Antarctic Science* 22, 3-10.

9. Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made:

None.

10. State:

a. Whether visits to the ship in port by scientist of the coastal state concerned will be acceptable:

Yes

b. Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation/-disembarkation:

Yes

c. When research data from intended cruise is likely to be made available to the coastal state and if so, by what means:

Shortly after the cruise in a cruise report

COASTAL STATE: Iceland

SCIENTIFIC EQUIPMENT

11. Complete the following table - include a separate copy for each coastal state (indicate "Yes" or "No" if applicable)

Marine scientific equipment used	water depth (m)	fisheries research	distance of research to coast in nautical miles			
				< 3	3-12	12-50
Box corer	50 - 2000	No	No	Yes	yes	yes
Piston corer	50 - 2000	No	No	No	yes	yes
CTD	0 - 1000	No	No	Yes	yes	yes
In-situ pump	1000	No	No	No	yes	yes
Sediment trap (mooring)	2000	No	No	No	no	yes

List of intended sampling stations during Pelagia cruise

See figure at Part B.4. Exact locations will be determined based on echosounder survey results.

References

No additional references