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In Confidence - Not to be quoted without prior reference to the Laboratory

FRV "Clupea"
Cruise 8/85

8CR85 MB

REPORT
10-25 July, 1985

Personnel

C Chapman
G Howard
C Shand
K Ballantyne
K MacKenzie (jnr)

Objectives

- 1) To determine trawl catch rates and Nephrops size and sex composition on grounds in the Moray Firth and North Minch.
- 2) To obtain underwater television and photographic records of Nephrops burrows in the same areas.
- 3) To study variations in Nephrops catch at different times of the day/night.
- 4) To study Nephrops distribution and population parameters in relation to sediment characteristics.

Narrative

"Clupea" left Buckie at 1655 on 10 July and commenced trawling on the "Hummel" ground (57°53.3'N; 03°28.8'W). Day and night fishing continued in this area until 0730 on 12 July when the vessel returned to Buckie. The TV camera sledge was then made ready and a TV survey of grounds off Forres (57°44.51'N 03°35.56'W) was carried out on the morning of 13 July. "Clupea" then made passage to the North Minch arriving early on 14 July. Day and night trawling was carried out on Nephrops grounds off Stornoway (58°06.3'N; 06°14.2'W) and this was completed early on 18 July. The half-landing was taken in Stornoway on 17 July. Between 18-20 July, trawling, TV observations and grab sampling was conducted at several other positions in the North Minch. "Clupea" returned to the Moray Firth on 21 July where a trawl, TV camera and grab survey was conducted at 7 stations before the cruise terminated at Buckie on 25 July. Two water samples for radio-caesium analysis were collected off Buckie and Cape Wrath.

Results

a) Trawling A total of 31 hauls were made (of 30 or 60 mins duration) using a small mesh trawl (BT 118A) of which 24 were carried out to study day/night variations in Nephrops catches on 2 grounds. At 57-59 m depth in the Moray Firth catch rates varied from 7.4 to 473 kg/hour with the largest catches obtained just before sunset and sunrise. Catch rates off Stornoway (85-106 m depth) revealed similar periodicity but were lower than in the Moray Firth, varying from 10-67 kg/hour. The mean size of both male and female Nephrops varied considerably with the time of day/night. In the Moray Firth the average size was smallest at the time of peak catches around sunset and sunrise whereas off Stornoway the average size was smallest in catches taken during the night.

At other locations Nephrops catches varied from 4-16 kg/hr in the North Minch and from 1-154 kg/hr in the Moray Firth.

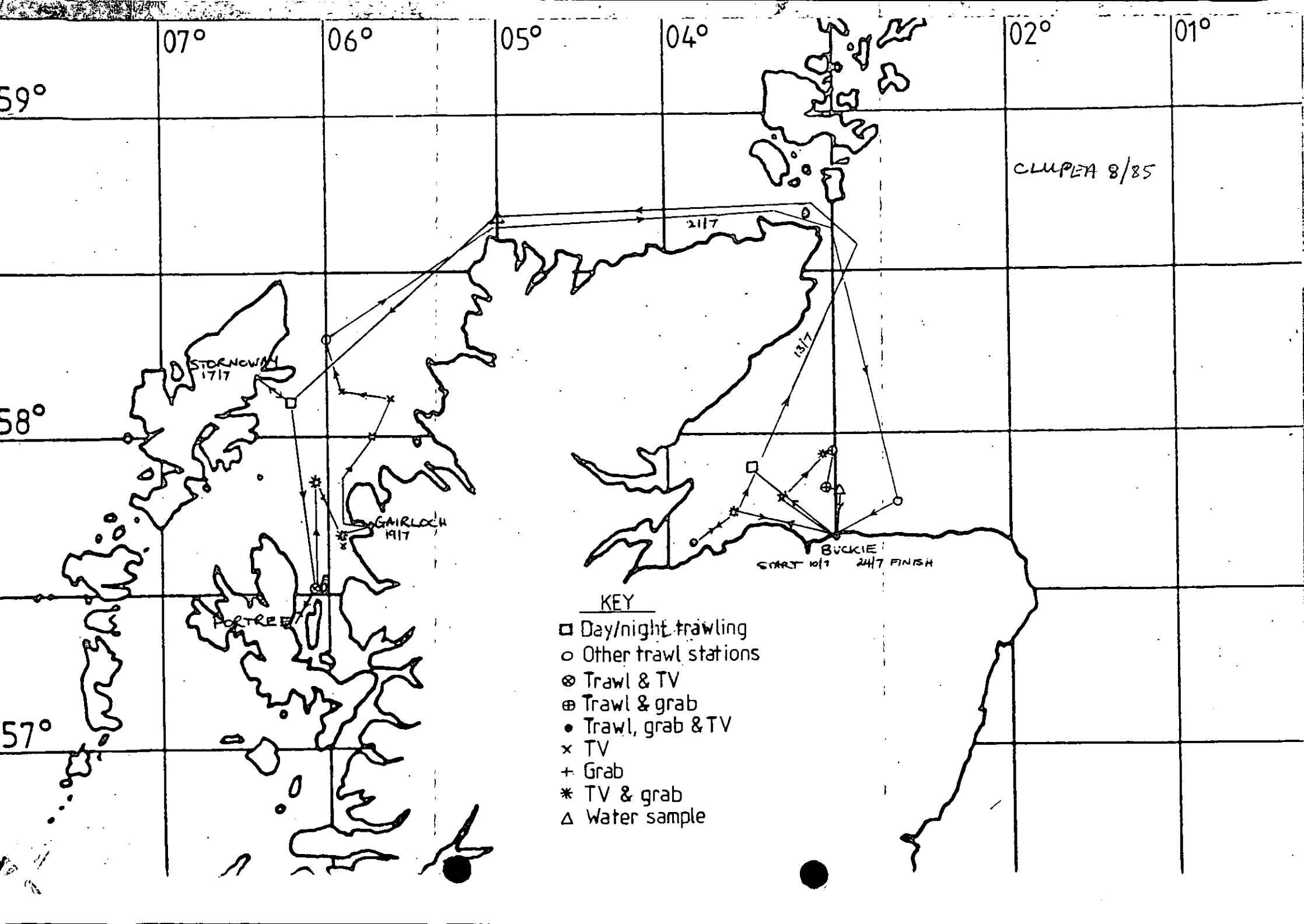
6) Television and photographic observations The camera sledge was deployed at 13 station during which 15 hours of video recording and over 500 photographs of the sea bed were taken for later analysis. The laser system for calibration of the camera field of view worked well and gave useful information on the firmness of the mud and the depth to which the runners were sinking into the sediment. Areas in which the firmness of the sediment appeared to change during the TV runs were studied in more detail and sediment samples were collected from several positions along the sledge tracks (and trawl tows) for particle size, organic carbon and faunal analysis.

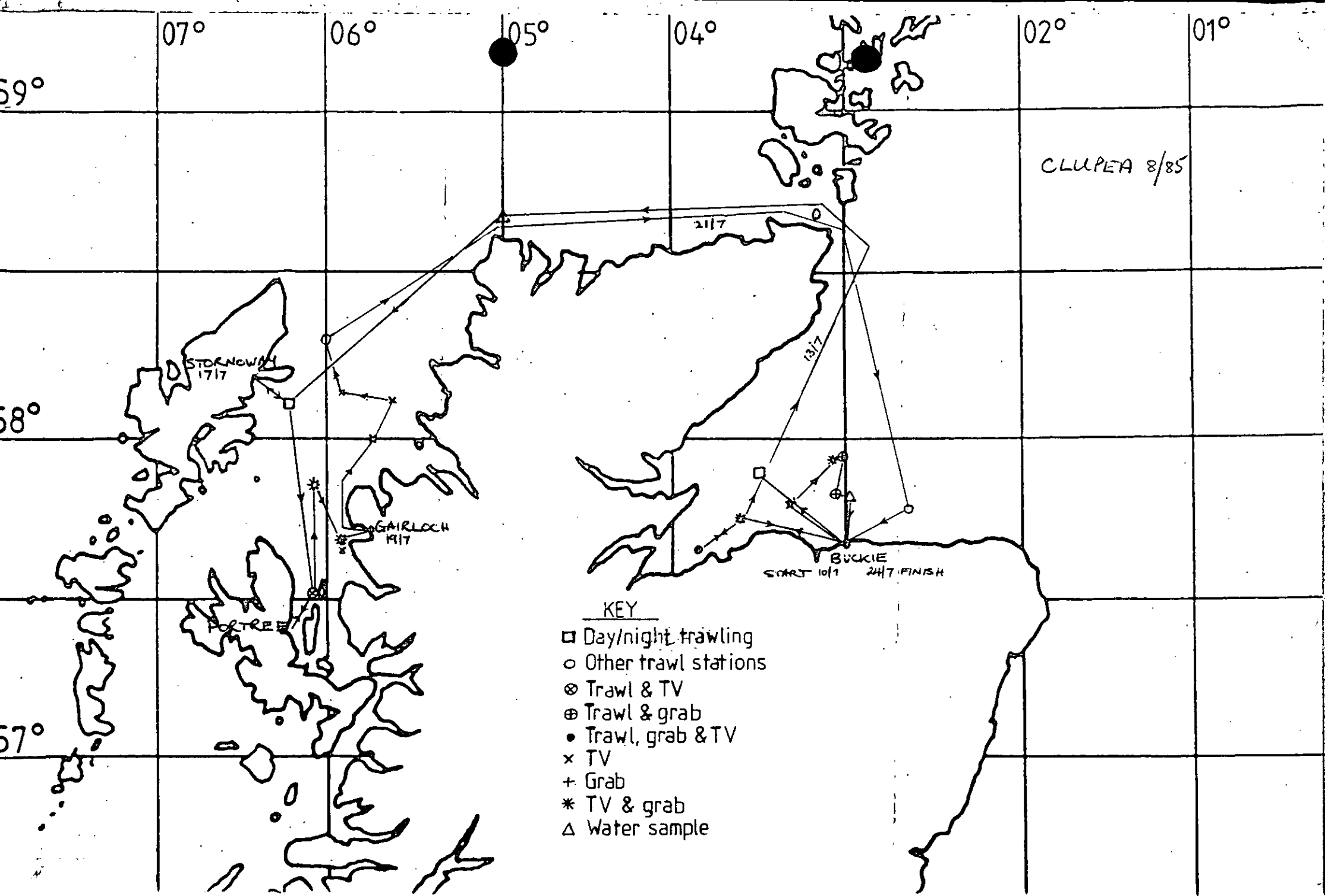
C J Chapman

18 February 1986

See in draft

W Smith





CLUPEA 8/85

STORNOWAY
17/7

GAIRLOCH
19/7

PORTREE

BUCKIE
START 10/7 24/7 FINISH

KEY

- Day/night trawling
- Other trawl stations
- ⊗ Trawl & TV
- ⊕ Trawl & grab
- Trawl, grab & TV
- × TV
- + Grab
- * TV & grab
- △ Water sample

