# DREDGE OPERATIONS LOG

CRUISE KODOS97-4

STATION 7

DREDGE NO. D8

DEPTH INTERVAL(m) 1912-1476

JD 240/241 (241-242)

LOCAL 8-30-97

CHIEF SCIENTIST Hoern / Hein

TECH ON WATCH Lee

| ON STATION | DREDGE ON BOTTOM | DREDGE OFF BOTTOM | OFF STATION |
|---|---|---|---|
| | | | |
| | | | |
| | SEE page 1 | | |
| | | | |

D8

Site Description and Target:

| Operation* | GMT | Depth(m) | Wire Out(m) | Tension | HDG/SPD | Comments |
|---|---|---|---|---|---|---|
| Bite | 0:45 | " | | 2.3 | | Broke |
| Bite | 0:46 | 1474 | | 2.5, 2.6 | | Broke |
| | 1:00 | 1477 | 1650 | | | Bringing Wire In |
| Off Bottom | | 1476 | 1495 | | | 11°39.12' 161°40.7' |
| | | | | | | |
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*on/off bottom, bites, etc.

Other Comments:

# DREDGE SAMPLE LOG

| | | | JD | LOCAL |
|---|---|---|---|---|
| CRUISE | KODOS97-4 | DATE | 243-244 | 9/1/97 |
| STATION | ST 15 | | GMT | LOCAL |
| DREDGE | D8 | TIME | 2014 - 0103 | 8:14 am - 1:03 pm |
| DEPTH INTERVAL(m) | 2397 - 2005 | LATITUDE (N,S) | 11°34.12 - 11°36.34' | |
| DEPTH(m) CORRECTED | 2390 - 2150 | LONGITUDE (E,W) | 161°42.37 - 161°42.02' | |

TOTAL WEIGHT : DREDGE 6 CRUST 5.5+

%OF ROCK COVEREDBY CRUST 99% 1% patina

%BROKEN FROM : OUTCROP 99% TALUS 1%

THICKNESS OF CRUST : MAX 70+ mm MIN patina AVG +50mm

DOMINANT SURFACE TEXTURE botryoidal

SUBSTRATE LITHOLOGY none with crusts

2 mudstone cobbles w/patina
talus

3 pumice pebbles

NODULES PRESENT ϕ

REMARKS:

decapitated crust

bill-nosed cat tail fish (about 2' long)

KODOS 97-4 D8

Dredge Sample Summary Sheet

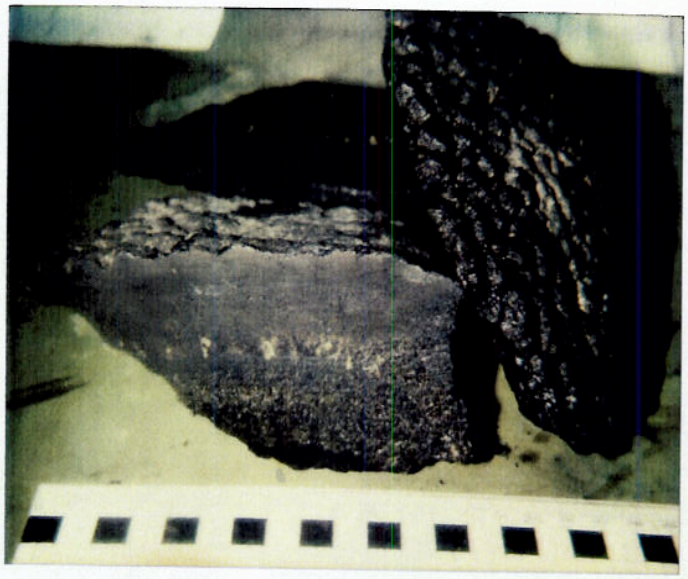
| Sample ID | Bulk CC | Layer CC | Pt & Au | REE | OC | DPTS/TS | XRD | 35mm Photo | Archive | Paleo |
|---|---|---|---|---|---|---|---|---|---|---|
| D8-1A | ✓ | | ✓ | | | | ✓ | | | |
| D8-1B | | ✓ (layer 1) | | | | | ✓ | | | |
| D8-1C | | ✓ layer 2 | | | | | ✓ | | | |
| D8-1D | | ✓ layer 3 | | | | | ✓ | | | |
| D8-1E | | ✓ layer 4 | | | | | ✓ | | | |
| D8-1F | | ✓ layer 5 | | | | | ✓ | | | |
| | | | | | | | | | | |
| D8-4A | | | | | | | ✓ | | | |

powder 10g

# SAMPLE DESCRIPTION

**Cruse Id:** KODOS97-4 **Size(cm):** 31 x 14 1/2 x 7 **Location:** Tomilik

**Sample Id:** D8-1 **Weight(kg):** 2.6kg **Depth(m):** 2590-2150



KODOS 97-4
D8-1

## Mn Crust Description

Surface Texture: Botryoidal to granular on side

## Mn Crust Thickness(mm):

Min: 70 Max: 75 Ave: 73

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | 5 | 10 | 7 | black massive |
| 2 | 20 | 29 | 25 | black porous (one) glassing |
| 3 | | | | to [illegible] bottom |
| 4 3 | 3 | 5 | 4 | black massive few pores |
| 5 4 | 19 | 29 | 25 | black porous |
| 6 5 | 10 | — | 10 | black massive |

## Comments and XRD Mineralogy:

incomplete crust
overall very porous crust.
Seeds in vugs.

## Substrate Description

RockType: —

Description: —

Biology: Encrusting forams.

Described by: Leanne Robertson

## Analyses

| Subsample No. | Analysis | Layer Thick. | Wt.(g) |
|---|---|---|---|
| D8-1A | CC, PSF | Bulk | ~55g |
| D8-1B | CC | layer 1 | ~30g |
| D8-1C | CC | layer 2 | ~55g |
| D8-1D | CC | layer 3 | ~15g |
| D8-1E | CC | layer 4 | ~35g |
| D8-1F | CC | layer 5 | ~25g |

~10g powder to KORDI (D8-1A)

1/2 to Kordi

1/2 to USGS

Subsampled by:

# SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): 22x15x6 Location: Lomilik

mple Id: D8-2 Weight(kg): 1.4 Depth(m): 2390-2150

## Mn Crust Description

Surface Texture: Botryoidal

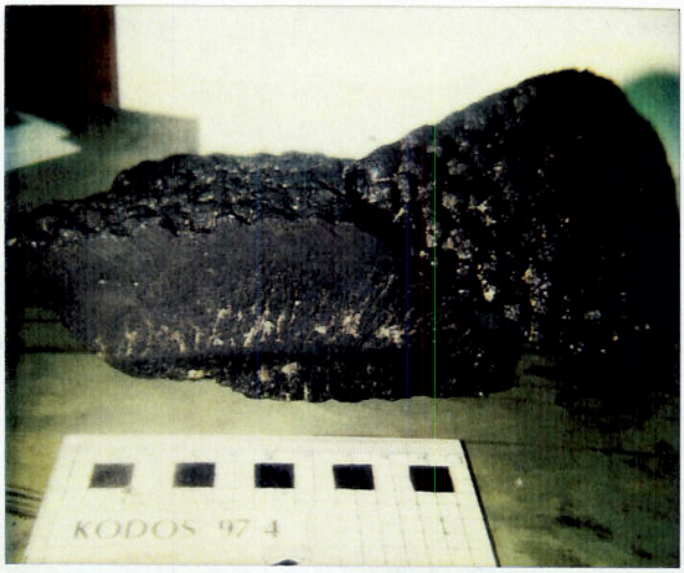
Granular on side

## Mn Crust Thickness(mm):

Min: 50 Max: 55+ Ave: 54+

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | 10 | 15 | 14 | Black botryoidal |
| 2 | 18 | 22 | 20 | Porous grading To Vuggy |
| 3 | 7 | 9 | 8 | Massive Black |
| 4 | 10 | 15 | 12 | Vuggy To porous Black |
| 5 | | | | |
| 6 | | | | |




KODOS 97-4
D8-2

## Comments and XRD Mineralogy:

Layer 4 incomplete - min. thickness

## Substrate Description

RockType: None

Description:

ology: Encrusting Foram's

Described by: Hein

## Analyses

Subsample No. Analysis Layer Thick. Wt.(g)

½ HORDI

½ USGS

Subsampled by:

# SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): Location:

Sample Id: Weight(kg): Depth(m):

## Mn Crust Description

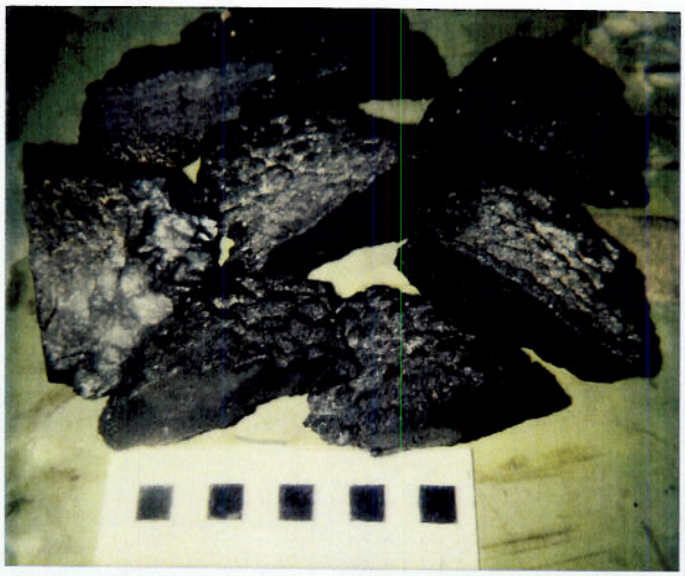
Surface Texture:

## Mn Crust Thickness(mm):

Min: 15 Max: 35 Ave: 25

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | 5 | 8 | 6 | |
| 2 | 5 | 10 | 7 | |
| 3 | 4 | 16 | 10 | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |



KODOS 97-4
DG-3

## Comments and XRD Mineralogy:

## Substrate Description

RockType:

Description:

Biology:

Described by:

## Analyses

Subsample No. Analysis Layer Thick. Wt.(g)

½ KORDI

½ USGS

Subsampled by:

# SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): 2 pebbles Location: Loma 17

mple Id: D8-4 Weight(kg): 0.16 Depth(m): 2390-2150

## Mn Crust Description

Surface Texture: Smooth Patina

## Mn Crust Thickness(mm):

Min: _____ Max: _____ Ave: _____

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

D8-4

## Comments and XRD Mineralogy:

## Substrate Description

RockType: Mudstone

Description: Laminated Brown-
Lamina defined by Mn oxide -
Mn Oxide Dendrites

ology:

Described by: Hein

## Analyses

| Subsample No. | Analysis | Layer Thick. | Wt.(g) |
|---|---|---|---|
| D8-4R | XRD | | |
| ½ | HORDI | | |
| ½ | USGS | | |

Subsampled by: Hein

# SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): 3 pieces Location: [illegible]

Sample Id: D8-5 Weight(kg): 450g Depth(m): 0390-0150

UNCUT

## Mn Crust Description

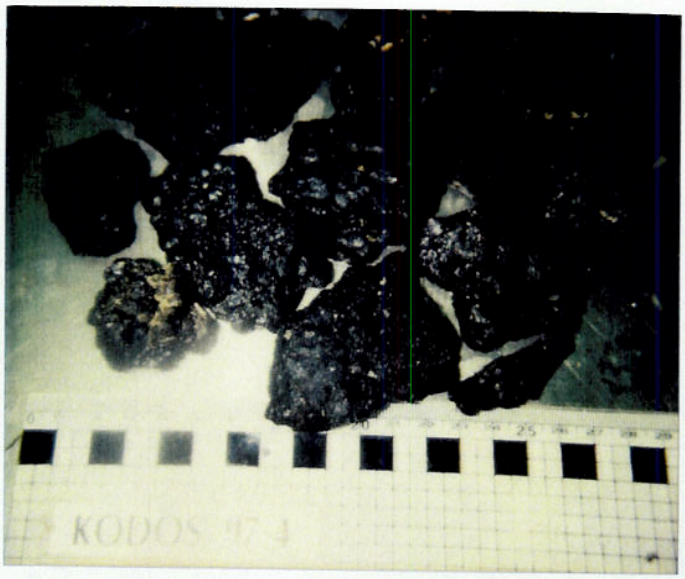
Surface Texture: [illegible] → [illegible]

## Mn Crust Thickness(mm):

Min: 10 Max: 25 Ave: 20

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | to | many | rx to | describe |
| 4 | | | | individually |
| 5 | | | | |
| 6 | | | | |




D8-5

## Comments and XRD Mineralogy:

all samples show surface

none show substrate

all show layer 1 (black, massive)

massive → porous pores have sed infill

## Substrate Description

RockType: —

Description: —

Biology: few encrusting forams

Described by: Leanne Roberts

## Analyses

| Subsample No. | Analysis | Layer Thick. | Wt.(g) |
|---|---|---|---|
| | | | |

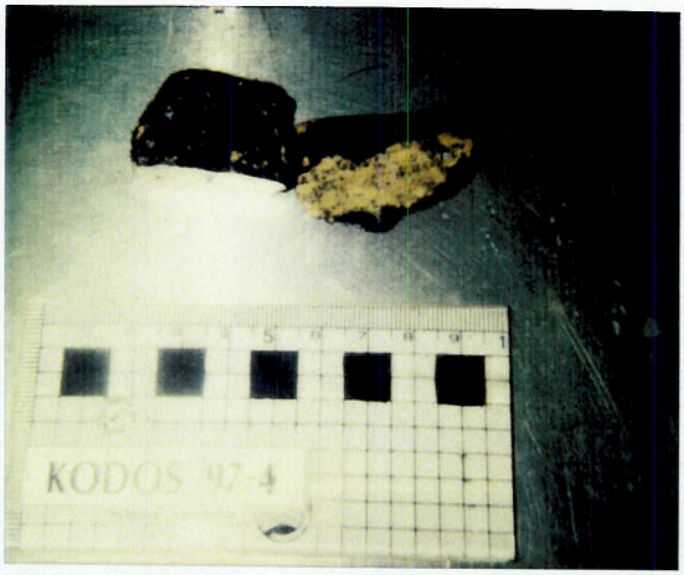
all to KORDI

Subsampled by:

# SAMPLE DESCRIPTION

**Cruse Id:** KODOS97-4 **Size(cm):** Pebble **Location:** Lomilik

**Sample Id:** D8-6 **Weight(kg):** <0.1 **Depth(m):** 2390-2150




D8-6

### Mn Crust Description

Surface Texture: Granular Patina

### Mn Crust Thickness(mm):

Min: _____ Max: _____ Ave: _____

### Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

### Comments and XRD Mineralogy:

### Analyses

| Subsample No. | Analysis | Layer Thick. | Wt.(g) |
|---|---|---|---|
| 100% KORDI | | | |

### Substrate Description

RockType: Phosphorite

Description: Yellow-brown hard dense peppered w/ Mn

Biology: NONE

Described by: Hein

Subsampled by:

# SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): 3 pieces Location: Izu-Bonin

Sample Id: DS-7 Weight(kg): 50g Depth(m): 2290-2350

## Mn Crust Description

Surface Texture: No crust

## Mn Crust Thickness(mm):

Min: _____ Max: _____ Ave: _____

## Outer to Inner Layers(mm)

| | Min | Max | Ave | Texture & Color |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

DS-7

## Comments and XRD Mineralogy:

no crust

## Analyses

Subsample No. Analysis Layer Thick. Wt.(g)

all to Kobe

## Substrate Description

RockType: Pumice

Description: Grey

Biology: None

Described by:

Subsampled by:

# DREDGE OPERATIONS LOG

| | | | JD | LOCAL |
|---|---|---|---|---|
| CRUISE | KODOS97-4 | DATE | 243-244 | 9-1-97 |
| STATION | St. #15 | CHIEF SCIENTIST | Moore / Heim | |
| DREDGE NO. | D8 | TECH ON WATCH | WONG-GUN SUNG | |
| DEPTH INTERVAL(m) | 2397-2005 | | | |
| CORRECTED DEPTH | 2390-2150 | | | |

| | ON STATION | DREDGE ON BOTTOM | DREDGE OFF BOTTOM | OFF STATION |
|---|---|---|---|---|
| GMT | 243(8/31) 19:22 | 20:14 | 0015 | 0103 |
| Lat | 11° 32.798' | 11° 34.12' | 11° 36.351' | 11° 36.32 |
| Lon | 161° 42.767 | 161° 42.38' | 161° 42.02' | 161° 41.81 |
| Depth | 2550 | 2397 | 2005 | 2034 |

**Site Description and Target:**

dredging from 2400 to 2000 m

| Operation* | GMT | Depth(m) | Wire Out(m) | Tension | HDG/SPD | Comments |
|---|---|---|---|---|---|---|
| on bottom | 20:14 | 2391 | 2990 | 1.1 | 349.4/0.4 | |
| wire out | 20:16 | 2392 | 3010 | 1.1 | 339.7/0.7 | |
| start to dredge | 20:16 | 2392 | 3010 | 1.1 | 339.5/0.3 | 11°34.115N/161°42.375E |
| S. Bites 1 | 20:25 | 2371 | 3065 | 2.[illegible] | 3.0/2.0 | Tension. 2.2, 2.6, 2.7 |
| S. Bites 2 | 20:28 | 2354 | 3083 | 2.9 | 2.1/1.9 | 11°34.258N/161°42.327E |
| Dredging | 20:41 | 2281 | 3064 | 1.8 | 2.1/2.1 | 11°34.749N 161°42.277E |
| " | 20:51 | 2236 | 3025 | 1.7 | 4.3/2.0 | 11°35.124N 161°42.235E |
| " | 21:01 | 2207 | 2992 | 1.6 | 353.5/1.0 | 11°35.386N 161°42.144E |
| " | 21:11 | 2195 | 2927 | 1.5 | 353.2/0.1 | 11°35.458N 161°42.[illegible]82E |
| " | 21:21 | 2142 | 2890 | 1.5 | 353.5/0.8 | 11°35.640.N 161°42.99E |
| " | 21:31 | 2104 | 2860 | 1.6 | 3.4/1.0 | 11°35.882N 161°41.916E |
| " | 21:41 | 2097 | 2823 | 1.5 | 2.6/0.9 | 11°36.[illegible]N, 161°41.865E |
| " | 21:51 | 2030 | 2798 | 1.5 | 2.1/0.5 | 11°36.365N, 161°41.801E |
| " | | 2034 | 2793 | 1.5 | 309.0/1.0 | 11°36.324N 161°41.801E |

*on/off bottom, bites, etc.

**Other Comments:**

# DREDGE OPERATIONS LOG

| | | | JD | LOCAL |
|---|---|---|---|---|
| CRUISE | KODOS97-4 | DATE | 243-244 | 9-1-91 |
| STATION | St. #15 | CHIEF SCIENTIST | Moore / Heirtzler | |
| DREDGE NO. | D.8 | TECH ON WATCH | WONG-GOH SONG | |
| DEPTH INTERVAL(m) | 2397 - 2005 | | | |
| CORRECTED DEPTH | 2390-2150 | | | |

| ON STATION | DREDGE ON BOTTOM | DREDGE OFF BOTTOM | OFF STATION |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

**Site Description and Target:** Continue. (D.8)

cf.) Average tension ≒ 1.6 ~ 1.8

| Operation* | GMT | Depth(m) | Wire Out(m) | Tension | HDG/SPD | Comments |
|---|---|---|---|---|---|---|
| S. Bites | 22:05 | 2039 | 2725 | 1.8, 1.9 | 300.7 / 0.8 | 11°36.308 N, 161°41.850E |
| S Bites | 22:13 | 2054 | 2695 | 1.9 | 301.8 / 0.4 | 11°36.277 · 161° 41.898E |
| " | 22:15 | 2060 | 2688 | 2.0 | 301.4 / 0.4 | 11°36.270 161° 41.904E |
| " | 22:24 | 2053 | 2651 | 1.9, 2.0, 2 | 307.4 / 0.2 | 11°36.286, 161°41.883E |
| " | 22.29 | 2055 | 2637 | 2.1, 2.2, 2.0 | 308.4 / 0.6 | 11° 36.296, 161° 41.886E |
| | | | | 2.1, 2.2, 2.1 | | |
| " | 22:30 | 2056 | 2616 | 2.3, 2.3, 2.4 | 307.7 / 0.5 | 11°36.307, 161 41.896 |
| M. Bites. | 22:34 | 2054 | 2600 | 2.5 | 308.6 / 0.4 | 11.36.284, 161 41.893 |
| S. Bites | 22:39 | 2071 | 2568 | 2.3 | 312.6 / 0.5 | 11.36.246, 161 41.897 |
| " | 22:44 | 2073 | 2542 | 2.5 | 323.4 / 0.4 | 11.36.230, 161.41.9 |
| " | 22:50 | 2064 | 2530 | 2.6. | 317.4 / 0.9 | 11.36.300, 161 41.35 |
| Dredging. | 22:58 | 2002 | 2515 | 1.5 | 318.1 / 0.9 | 11.36.420 161 41.198 |
| " | 23:08 | 2009 | 2492 | 1.3 | 294.1 / 1.4 | 11.36.352, 161 41.892 |
| " | 23:18 | 2019 | 2468 | 1.4 | 290.8 / 0.3 | 11°36.320 161.42.00 |

*on/off bottom, bites, etc.

**Other Comments:**

# DREDGE OPERATIONS LOG

| | | | JD | LOCAL |
|---|---|---|---|---|
| CRUISE | KODOS97-4 | DATE | 243-244 | 9-1-97 |
| STATION | St. 15 | CHIEF SCIENTIST | Moore / Heim | |
| DREDGE NO. | D.8. | TECH ON WATCH | SONG | |
| DEPTH INTERVAL(m) | 2397-2005 | | | |

GMT

| ON STATION | DREDGE ON BOTTOM | DREDGE OFF BOTTOM | OFF STATION |
|---|---|---|---|
| | | 00:15 | 01:03 |
| | | 11° 36' 398 | 11° 36.324 |
| | | 161° 42.022 | 161° 41.807 |
| | | Water D.: 2005m. | 2034 m |

**Site Description and Target:** Continue (D8).

GMT

| Operation* | GMT | Depth(m) | Wire Out(m) | Tension | HDG/SPD | Comments |
|---|---|---|---|---|---|---|
| Dredging | 23:28 | 1996. | 2421 | 1.14 | 303.8 / 1.7 | 11° 36.430, 161° 41.893' |
| " | 23:43 | 1988 | 2481 | 1.3 | 280.0 / 0.4 | 11° 36.393, 161° 41.994' |
| " | 23:53 | 1989 | 2396 | 1.2 | 320.0 / 0.2 | 11° 36.384, 161 41.969 |
| " | 24:02 | 2003 | 2304 | 1.3 | 209.8 / 0.3 | 11° 36.359, 161° 41.982 |
| " | 00:14 | 2020 | 2153 | 1.5 | 305.3 / 0.5 | 11° 36.348 161 42.046 |
| off Bottom | 00:15 | 2005 | 2124 | 1.7 | 309.3 / 0.4 | 11° 36.338 161 42.022 |
| | | | | | | |
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*on/off bottom, bites, etc.

**Other Comments:**