

**Ship Scheduling Review
Room 340
National Science Foundation
Arlington, Virginia**

September 20, 2000

Appendices

- I. List of Attendees**
- II. Cruise Tracks**
- III. Estimate of Costs**

The Ship Scheduling Review meeting was called to order at 0830 by UNOLS Scheduling Committee Chair, Joe Ustach. Because there were many unresolved issues remaining, many of the UNOLS ship schedulers were in attendance and Rose Dufour from Scripps was included in the deliberations by telephone. A list of attendees is included as **Appendix I**. Posted schedules or Letters of Intent were reviewed one at a time, starting with small, regional and intermediate class vessels. Class I vessels were handled as a group. Comments regarding each ships proposed schedule follow. This meeting was schedule to last for one half day, however during the morning session, ONR announced some changes to the requested dates for the LWAD programs which impacted several of the large ship schedules. This coupled with other scheduling conflicts, primarily affecting Class I vessels operating in the Pacific, made it necessary to conduct a scheduling session in the afternoon in an attempt to sort through the various options. Several contacts with affected PI's were made, however it soon became clear that more work would be needed to resolve these schedules. For this reason the results of those follow on actions are reported as part of this meeting. The meeting was adjourned at 5 pm.

ALPHA HELIX

Schedule looks good; GLOBEC cruises still in funding flux, as usual; there is the potential of one extra day to the Weingartner cruises.

BLUE HERON

Some question about Kerfoot – is it a 7 or 14-day cruise? Cruises should be split between BLUE HERON and LAURENT IAN.

CAPE HENLOPEN

Put OCE numbers on schedule! Double booking of J. Barnhard with CAPE HATTERAS should be decided.

CAPE HATTERAS

Hwang is funded by Navy. Double booking with CAPE HENLOPEN should be decided.

EDWIN LINK

Potential Lay-up; Navy may have some time, however.

ENDEAVOR

Sohn needs to determine if cruises will continue. Balch double booked with OCEANUS, probably will go on ENDEAVOR in November. Balch still needs a summer cruise; on SEWARD JOHNSON? Cabel Davis to go on OCEANUS in September.

OCEANUS

Balch cruise worked out with ENDEAVOR; Balch still needs summer cruise, on SEWARD JOHNSON? McCartney and Plueddemann cruises ok together.

GYRE

LWAD cruise may go later in year and for more days – 14 Feb to 10 March with transits and mobilizations. Santchi cruise is funded (OCE 9906823). Need to identify AUV cruise in April. May be double booked with one on NEW HORIZON. If so, cruise will go on NEW HORIZON.

NEW HORIZON

Bishop is NOPP instead of Navy; put NOPP 99 in proposal number slot. Last NAVO cruise should be Phys. Ocean. instead of SCORE; can move to Jan 02 if need be. Rudnick cruise needs to be synchronized with Fairall cruise on BROWN. Childress cruise needs to be synchronized with ATLANTIS.

LONGHORN

NAVO cruise ok.

POINT SUR

Schedule ok.

SEA DIVER

Phinney and Miller funded.

SEWARD JOHNSON

Joe Pawlik not scheduled; perhaps on WALTON SMITH? Needs 14-16 days in May, June, July and room for 25 in science party. Can fit Balch in sometime between 26 Feb and 16 April. Find out if timing is ok or too early. Need to check on Williams NOPP to see if he should be going to sea.

SPROUL

Is Pineda one or more cruises? Can SPROUL be used to help unsnarl the Pacific tangle?

BARNES

MacCready won't go in 2001; if funded will go in 2002, at the earliest. Devol still pending, proposal number is OPP 0085162.

BLUE FIN

Jahnke, Paffenhofer, and Hollibaugh all funded.

PELICAN

Walsh and Paul cruises go on WALTON SMITH. Ruttenberg needs to be considered. Powell NSF number should be OCE 0000351. Rabalais still may have fewer days. Hwang cruise should be checked into.

LAURENTIAN

Potentially weak schedule – maybe less than 50 days. Cuhel still pending. Moore cruise may not be compatible with ship. Eadie has only 24 days. Kerfoot should be scheduled for 7 or 14 days – see BLUE HERON comments.

URRACA

Need to submit a schedule! Need to participate in scheduling process – at least electronically. Fourteen NSF days.

WALTON SMITH

Paul Grant number is OCE 9811319. The NAVO cruise should be Mayport instead Of Florida Straits. Some NAVO scheduling problems need to be straightened out.

ATLANTIS

Transit times for Smith and LWAD cruises may be shortened. NSF may need an additional 15 dives for Lutz in Bermuda. Engineering dives may only be one day for each agency. Can NAVO Hawaii cruise fit in here?

EWING

Fisher cruise ok on EWING if equipment problems can be worked out. Gaherty has instrumentation problems and may have to go later in year. Might affect Fisher cruise. Johns prefers later date; may not be practical.

BROWN

Fairall cruise needs coordination with Rudnick on NEW HORIZON. Depending on funding, more ship days may happen in July – August time.

KOK

166 days scheduled - mostly NSF/NOAA time HOTS. Malahoff, NSF cruise not scheduled – up to 10 days ship time.

KNORR

Simard schedule ok. NAVO looking at gravity survey off Puerto Rico after Simard; may take priority over Hawaii multi-beam.

Others – No closure done on big ships in Pacific. Alternative schedules being worked on to see what gets left off. At end of the meeting the tangle included:

ROV Problems: Coffin has no vehicle and no ship as yet. Johnson will get heat transfer cruise done. For his LEXEN initiative there were three possibilities: 1.) Postpone until

2002; 2.) Go immediately after heat transfer dive; 3.) Go in September if a vehicle can be found that is available.

Honolulu Problems: Chave cruise is hanging. May be able to go on WECOMA after Anderson, but Chave is balking at this option because of vessel capabilities. Sansone cruise has to go in June/July; is also left hanging. NAVO wants a ship near Honolulu for up to 45 days (but see comments at KNORR). Can be done in one, two, or three separate cruises, but prefer one cruise. Will attempt to find an alternative schedule that can allow Chave, Sansone, Coffin, and NAVO(?) to go in summer in Honolulu. Coffin also needs an ROV – see above.

WECOMA, THOMPSON/REVELLE Problems: Wheeler and Barth cruises must coincide. They can miss each other by 4-5 days at most. Wheeler's earliest time is a mid-May start and second cruise has to end in August. Whichever ship Wheeler's first cruise has, must be used for her second cruise.

LWAD Problems:

LWAD 01 Gulf of Mexico – All is ok

LWAD 02 Far East – missing one large ship

LWAD 03 Southern California – missing one large ship.

See Cruise Tracks, **Appendix II**

See Estimate of Costs, **Appendix III**

POST-MEETING SCHEDULING PROCESS

Due to the number of outstanding issues, in particular with large ship in the Pacific, a number of conference calls and email correspondence took place to arrive at the best possible solutions. The following is a summary of the outcome of the follow on deliberations.

Here is a summary of the results of the conference calls and work on the 2001 Schedules in the Pacific for REVELLE, MELVILLE, THOMPSON, EWING, ATLANTIS, WECOMA and KOK

1. The schedules that are being proposed as the "final solution" are the Thompson 2 LOI, Revelle 3 (email format only from Rose Dufour Monday, October 2, 2000 1:07 PM) and Melville's posted schedule all dated Oct. 2, 2000. They are included at the bottom of this message.
2. There is no set of solutions that we have been able to develop that do not leave some work on the beach altogether or defers work to 2002.
3. Some of the work being scheduled in 2001 has already been deferred from 2000 or earlier. These are the cruises for Becker, Chadwell, Silver, Van Dover, Fryer and Levin.
4. Some of the work being scheduled in 2001 are follow on cruises to work already started where deployed equipment could not be recovered or time series values would be disrupted. These include: Levin, Johnson, Home Projects, Spiess and ASIA-Ex.
5. For many of the cruises being scheduled there have been serious constraints due to the availability of ROV's, weather windows, coastal processes, multiple ship operations and coordination with larger operations or exercises.

6. ROV availability and shipping time requirements result in the ROV JASON being scheduled for Van Dover, Johnson, Silver and Schouten. JASON is not available for Levin, who will use a smaller leased vehicle; Coffin, who is pursuing other options, and Johnson's Lexen Cruise which is being deferred to 2002.

7. Solutions using the R/V RONALD BROWN have not been possible at this point in time due to the uncertainty of their funding status and the level of support needed for the NOAA work. BROWN would not be available for LWAD - 02 due to conflict with other work.

8. Fisher will be scheduled on EWING in order to free up time on REVELLE schedule. This should be acceptable to the PI.

9. The following cruises are not scheduled, are deferred or in less than desired time slots under this proposed set of schedules.

a. Hildebrand is being deferred until 2002 due to the inability to have a ship in Hawaii at the right time for a long enough period. PI is aware of this and although not particularly happy about it, has accepted it. This is supposed to be an annual measurement. SIO needs to send note to NSF ship ops program manager or PI needs to inform his program manager.

b. Worcester/Chave - First Deployment cruise not in optimal window, they are at the earliest possible weather window for deployments in order to utilize available ship (REVELLE) and still get their gear in the water before the rest of the HOME project cruises later in the year. Chave cannot go much earlier due to availability of equipment.

c. Chadwell- already delayed two years and scheduled later than desired in 2001 due to need for specific ship in a location off South America.

d. Becker- already delayed two years and later in 2001 due to specific ship/equipment needs in remote area.

e. Lisa Levin - already delayed six months later and required to complete second cruise in a different year using a different ROV than originally requested due to conflicts in ROV schedule.

f. Rick Coffin - Not scheduled with either a ship or ROV due to conflicts with other projects for use of ROV (Johnson and Silver) and Ship (LWAD and COAST). PI and Program manager are aware and looking for alternatives.

g. Paul Johnson (LEXEN) This cruise is deferred until 2002 due to conflicts with ROV schedule and COAST project. PI is aware of this and it is acceptable to him.

h. LWAD - 02 (Japan) - Only one of the two ships requested is provided (MELVILLE). The change to later dates creates a hole in the MELVILLE schedule between ASIA-EX and LWAD up to a month long, depending on how much time ASIA EX actually uses. This hole is not long enough to pick-up any work in Hawaii or the South Pacific. These LWAD dates also mean that MELVILLE cannot get to Hawaii in time to carry out the Worcester mooring turn-around cruise before Flip gets underway for HOME project. The second possible ship for LWAD-02 is the THOMPSON, however having THOMPSON steam to Japan for LWAD would adversely impact the NSF COAST project in the Pacific Northwest and would not allow the THOMPSON to conduct the Worcester turnaround cruise for HOME. The COAST project is a two-ship operation that must be coordinated with WECOMA and must include two separate field expeditions that fall within a fairly narrow upwelling season, all within the same year. Failing to do part of this project would put at risk the entire project, which would affect four cruises on WECOMA (Barth & Levine) and two cruises on THOMPSON (Wheeler). Providing THOMPSON for LWAD - 02 would require that they make a

deadhead transit from Seattle to Japan and then back again for the two-week LWAD project. REVELLE is not available at the requested time because they are deployed to South America to conduct cruises that have already been deferred for one or more years. For these reasons we are proposing to only provide one UNOLS ship for LWAD - 02 (MELVILLE).

i. LWAD - 03 (Southern California) - One large ship (THOMPSON) and one intermediate (WECOMA) are scheduled for this cruise. REVELLE and MELVILLE are deployed to the South Pacific for long standing cruises. Three ships had been tentatively scheduled for this exercise prior to the change of dates to November. One of the requested large ships cannot be provided without completely changing plans for REVELLE and MELVILLE that extend into 2002.

j. Voight and Garcia requests for Alvin and/or ROV are deferred because ATLANTIS will not go to the Pacific Northwest or Hawaii in 2001. ATLANTIS/ALVIN have a shorter operating year than normal due to ALVIN overhaul.

k. A very late request from Weingart at JHU/APL for a large, acoustically quiet vessel in the summer of 2001 in the Pacific Northwest is not scheduled due to conflicts with previously scheduled or requested work.

l. Sansone will be scheduled on KOK, which is acceptable to the PI in order to get the proper time frame, which is critical.

RESULTING SCHEDULES:

REVELLE:

POC: Rose Dufour/Elizabeth Brenner
SIO Ship Schedulers

LAST UPDATED: 29 September 2000

Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0210
Tel: 858-534-2841
Fax: 858-535-1817
Email: shipsked@ucsd.edu

R/V Roger_Revelle 2001

CRUISE DATES	MAP INDEX/AREA/PURPOSE	P.I./INSTITUTION/PROPOSAL NO.	PORTS	DAYS/AGENCY/STATUS/CLEARANCE
30 JAN 02 FEB	NP13/Southern Pacific/ Multibeam testing	deMoustier, C./ SIO/General Funds	San Diego San Diego	4/STATE/F
17 FEB 24 FEB	SP3A/Southern E. Pacific/transit NP12/to Hawaii/ transit	transit/na/ na Taylor/NAVO/ na	San Diego Hilo	3/NSF/P 5/NAVY/F
25 FEB 25 Mar 26	NP12/Off Hilo/ bathymetry survey	Taylor, P./NAVO/ N00	Hilo Honolulu	30/NAVY/F
27 28 Mar 10 APR 11	NP12/Off Hawaii/ HOME	Chave, A./WHOI/ OCE98-20759	Honolulu Honolulu	16/NSF/F
12,13 14 APR 27 Apr 28	NP12/off Hawaii/ deployment	Worcester/SIO/ na	Honolulu Honolulu	17/NSF/F
29 Apr 07 May	SP3A/transit/	transit/na/ OCE	Honolulu San Diego	9/NSF/F
10 May 16 May	NP9/Off San Diego/ ATV testing/	Spieß F./SIO	San Diego San Diego	7/STATE/P
18 May 06 Jun	NP9/44 N 130W/ Marine Geophysics	Spieß F./SIO/ OCE99-07247	San Diego San Diego	20/NSF/F
10 JUN 21 JUL 22,23	NP13/8.5N 105-85W/ SeaSoar	Kennan, S./NOVA/ OCE	San Diego Pto. Calder	44/NSF/F Costa Rica
24 Jul 13 Aug 14 15,16	NP13/Eastern Pacific 1 N 84/Borehole Instrum.	Becker K./RSMAS/ OCE98-19316	Pto. Caldera Guayaquil	22/NSF/F
17 Aug 19 Aug	SP3A/transit/ personnel transfer	Kurz, M./WHOI/ OCE00-02461	Guayaquil Pto. Ayora	05/NSF/P Ecuador
20 Aug 15 Sep	NP13/Galapagos Hotspot/towed camera	Kurz M./WHOI/ OCE00-02461	Pto. Ayora Pto. Ayora	27/NSF/F Ecuador

16 Sep	NP9/Transit/	Kurz, M./WHOI/	Pto. Ayora 05/NSF/P
20 Sep		OCE00-02461	Guayaquil or Guayquil
21,22			
23,24			
25 Sep	SP3A/Nazca S.A. Plate/	Chadwell, D./SIO/	Guayaquil 40/NSF/F
31 OCT	Marine Geophysics	OCE98-20026	Valparaiso Peru
1,2			
3,4,5			
06 NOV	SP3A/Off Chile - 18-2/	Naar, D./USF/	Valparaiso 42/NSF/F
13 DEC	gravity, mags. dredging	OCE00-02313	Easter Island Chile
14			
15 DEC	SA3/transit/	Coale, K./MLML/	Easter Island 15/NSF/P
30 DEC	transit	OCE	Lyttleton Chile, New Zealand

(Cross date line, lose a day)

Agency	Funded	Proposed	TOTAL
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NAVY	35	0	35
NSF	237	28	265
STATE	4	7	11
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TOTAL	276	35	311

MELVILLE:

POC: Rose Dufour/Elizabeth Brenner LAST UPDATED: 2 October 2000
SIO Ship Schedulers
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive
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Tel: 858-534-2841
Fax: 858-535-1817
Email: shipped@ucsd.edu

R/V Melville 2001

CRUISE DATES	MAP INDEX/AREA/PURPOSE	P.I./INSTITUTION/PROPOSAL NO.	PORTS	DAYS/AGENCY/STATUS/CLEARANCE
25,26				
27 DEC	SP2/Tonga Trench/	Yayanos, A./SIO/	Apia	26/NSF/F
25 JAN	LEXEN	OCE99-07651	Noumea	
26,27	[Cross date-line loss]			
	to Thompson			
?? JAN	NP12/Off Hawaii/	Worcester, P./SIO/	Honolulu	0/NSF/F
?? ???	HOME Fairfled	OCE98-19525	Honolulu	
28 JAN	SP1//	n.a./n.a./	Noumea	10/NSF/P
06 FEB	transit to Guam	n.a.	Guam	
7,8,9				
10 FEB	NP10/Mariana Forearch/	Fryer, P./SOEST/	Guam	23/NSF/F
01 MAR	Hawaii MR1, dredging	OCE99-07063	Guam	
2,3				
04 MAR	NP10//	Bloomer S./OSU/	Guam	39/NSF/F

12 APR	Hawaii MR-1, dredging /Mariana forear/ Hawaii MR-1	OCE001876 Fryer, P./SOEST/ OCE99-07063	Guam	5/NSF/F
13,14				
15 APR	/transit/	transit//	Guam	6/NAVY/F
20 APR			Naha	
20,21,22,23,24,25				
26 APR	NP7/East China Sea/	Dahl, P/APL-UW/	Naha	29/NAVY/F
27 MAY	ASIAEX	N0000-xxxxxxx	Naha	PRC, Taiwan, Japan, Korea
28,29				
30 MAY	NP7/East Sea/	Watts, R./URI/	Naha	3/NAVY/F
01 JUN	transit	N00014-98-1-0200	Pusan	
2				
03 JUN	NP7/East Sea/	Watts, R./URI/	Pusan	16/NAVY/F
17 JUN	Mooring Recovery	N00014-98-1-0200	Pusan	
18 JUN	/LWAD 01-2/	Burdette, J./Naval	Pusan	3/NAVY/F
20 JUN	transit	Air Warfare/N.A.	Naha	
21 JUN	/Off Korea & Japan/	Burdette, J./Naval	Naha	0/NAVY/P
14 JUL	non-op	Air Warfare/N.A.	Naha	
15,16				
17 JUL	/Off Korea & Japan/	Burdette, J./Naval	Naha	23/NAVY/F
05 AUG	LWAD 01-2	Air Warfare/N.A.	Naha	
6				
07 AUG	NP12//	transit//	Naha	10/NAVY/P
16 AUG			Lae	
17,18				
19 AUG	SP1/Papua New Guinea/	Silver/UCSC/	Lae	40/NSF/F
23 SEP	ROV Jason & AMS120	OCE99-07153	Lae	Papua New Guinea
24,25				
26 SEP	IN5/from Lae to	transit/n.a./	Lae	14/NSF/P
07 OCT	Honolulu/transit	n.a.	Papeete	
[cross date line gain a day]				
8,9,10				
11 OCT	SP3/16S-11S, 113-120W/	Forsyth D./Brown/	Papeete	55/NSF/F
30 NOV	multibeam, airgun, dre	OCE99-11729	Easter Island	
1				
14				
?? ???	NP12/Off Hawaii/	Taylor, P./NAVO/	Honolulu	0/NAVY/F
?? ???	bathymetry	n.a.	Honolu	

Agency	Funded	Proposed	TOTAL
NAVY	80	10	90
NSF	188	24	212
TOTAL	268	34	302

THOMPSON:

----- Forwarded message -----
Date: Mon, 2 Oct 2000 16:50:36 -0400 (EDT)
From: unols@gsosunl.gso.uri.edu
To: edieter@nsf.gov, schwartz@ocean.washington.edu
Subject: **Thomas_G_Thompson_2 2001 Letter Of Intent**

POC: Daniel S. Schwartz
Manager of Marine Operations
University of Washington
School of Oceanography
Box 357940
Seattle, WA 98195-7940
Tel: 206-543-5062
Fax: 206-543-6073
Email: schwartz@ocean.washington.edu

LAST UPDATED: 2 October 2000

Letter Of Intent
R/V Thomas_G_Thompson_2 2001

CRUISE DATES	MAP INDEX/AREA/ PURPOSE	P.I./INSTITUTION/ PROPOSAL NO.	PORTS	DAYS/AGENCY/ STATUS/ CLEARANCE
01 JAN	NP9/Shipyard Seattle/	Schwartz,D/UW/	Seattle	/Other/
15 JAN	Complete installation	n/a	Seattle	
23 JAN	NP9/Puget Sound/	McDuff,R/UW/	Seattle	4/STATE/F
26 JAN	Student Instruction	n/a	Seattle	
08 FEB	NP9//	Constable,S/SIO/	Seattle	4/NSF/F
11 FEB	Geophysics/transit	OCE-0002381	San Diego	
2				
14 FEB	NP9/California Coast/	Constable,S/SIO/	San Diego	23/NSF/F
05 MAR	Geophysics/transit	OCE-0002381	San Diego	
1				
Twenty science days, two mobilization days, and one de-mobilization day.				

07 MAR	NP9//	Constable,S/SIO/	San Diego	4/NSF/F
10 MAR	return transit	OCE-0002381	Seattle	
21 MAR	NP9/Wash./Ore. Coast/	Moum,J/OSU/	Seattle	8/NSF/F
28 MAR	Coastal Ocean Shelf Tr	OCE-9907854	Seattle	
COOP Instrumentation.				

02 APR	NP9/Puget Sound/	McDuff,R/UW/	Seattle	12/STATE/F
13 APR	Student Instruction	n/a	Seattle	
14 APR	NP9/Juan de Fuca/	Johnson,P/UW/	Seattle	3/NSF/F
16 APR	LEXEN-seamounts	OCE-0085615	Seattle	
Equipment trials in Puget Sound, for subsequent expedition to Juan de Fuca.				

21 APR	NP9/Calif. Coast/	Levin,L/SIO/	Seattle	12/NOAA/F

02 MAY JASON ROV-methane seep UAF(CA)-99-15 Seattle
Allow four days at homeport to mobilize ROV, before trip.

14 MAY NP9/Oregon/Wash. Wheeler, P/OSU/ Seattle 23/NSF/F
05 JUN Coast/COAST OCE-9907854 Seattle
21 days of science operations with a day to/from station at each end. This
is
the first of two cruises, the dates for which have been approved by the PIs
(in
an e-mail of 9/25)--held in conjunction with Wecoma cruises.

08 JUN NP9/Puget Sound/ McDuff, R/UW/ Seattle 4/STATE/F
11 JUN Student Instruction n/a Seattle

17 JUN NP9/Juan de Fuca/ Johnson, P/UW/ Seattle 17/NSF/F
03 JUL hydrothermal system th OCE-9907212 Seattle Canada
ROV Jason--allow 4 days to re-mobe ROV before cruise. This is a
continuation of work performed in CY-2000.

07 JUL NP9/Puget Sound/ McDuff, R/UW/ Seattle 21/STATE/F
27 JUL Student Instruction n/a Seattle

04 AUG NP9/Oregon/Wash. Wheeler, P/OSU/ Seattle 23/NSF/F
26 AUG Coast/COAST OCE-9907854 Seattle
21 days of science operations with a day to/from station at each end. This
is the second of two cruises, the dates for which have been approved by the PIs
(in an e-mail of 9/25)--held in conjunction with Wecoma cruises. If
Thompson performs this cruise, she will be unavailable for the Japan LWAD
exercise.

29 AUG NP9/North Pacific/ Worcester, P/SIO/ Seattle 8/NSF/F
05 SEP Transit to Hawaii/HOME OCE-9819525 Honolulu

1
07 SEP NP9/North Pacific/ Worcester, P/SIO/ Honolulu 13/NSF/F
18 SEP HOME/Farfield: recover OCE-9819525 Honolulu
Recovery of moorings installed by another vessel north of the Hawaiian
chain. One day of mobilization at Honolulu.

19 SEP NP9/North Pacific/ Worcester, P/SIO/ Honolulu 4/NSF/F
22 SEP HOME/Farfield: turnaro OCE-9819525 Honolulu

23 SEP NP9/North Pacific/ Worcester, P/SIO/ Honolulu 15/NSF/F
05 OCT HOME/Farfield: re-depl OCE-9819525 Honolulu

2
Re-deployment of moorings south of Hawaiian chain. Two
de-mobilization/provisioning days at end of cruise, before return transit.

08 OCT NP9/North Pacific/ Worcester, P/SIO/ Honolulu 8/NSF/F
15 OCT HOME/Farfield: return OCE-9819525 Seattle

18 OCT NP9/Cascadia Basin/ Emerson, S/UW/ Seattle 12/NSF/F
28 OCT Geochem Redox-sensitiv OCE-9911103 San Diego

1
Cores & pore water analysis. Ten days of science and one day for transit to
first station, and one-day de-mobilization at San Diego. Cruise will begin
at Seattle and end at San Diego, positioning ship for following LWAD
mobilization.

30 OCT NP9/Southern California/ Burdette, J/NAWCAD/ San Diego 20/NAVY/F
 18 NOV Southern California LW n/a San Diego
 Includes mobilization and de-mobilization days at San Diego.

21 NOV NP9/Pacific Coast/ Clark, D/NASA/ San Diego 28/NASA/F
 16 DEC EOS MRIS Initialization unknown Seattle Mexico
 This cruise was originally scheduled for CY-2000. Some funding has been reserved this year and remainder to be acquired next year, when the cruise will actually be run. Request changed to Nov. 2001 by PI on 8/14/00. Two days mobilization allowed for at beginning of trip. Science Ops/Transect will be from San Diego, down to Baja then up to Seattle.

20 DEC NP9/Puget Sound/ McDuff, R/UW/ Seattle 4/STATE/F
 23 DEC Student Instruction n/a Seattle

Agency	Funded	Proposed	TOTAL
NASA	28	0	28
NAVY	20	0	20
NOAA	12	0	12
NSF	165	0	165
STATE	45	0	45
TOTAL	270	0	270

ROV: (SOME OF THE DATES ON THIS SCHEDULE MAY NEED TO BE UPDATED)

POC: Jon Alberts LAST UPDATED: 25 September 2000
 Marine Operations
 Woods Hole Oceanographic Institution
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 Mail Stop-37
 Tel: 508-289-2277
 Fax: 508-457-2185
 Email: jalberts@whoi.edu

Letter Of Intent
R/V ROV 2001

CRUISE DATES	MAP INDEX/AREA/PURPOSE	P.I./INSTITUTION/PROPOSAL NO.	PORTS	DAYS/AGENCY/STATUS/CLEARANCE
24, 25, 26 MAR				
27 MAR	IN3/Central Indian Ridge/Vents, JASON	Van Dover/W & M/ OCE-9712358	Seychelles	35/NSF/F
05 MAY	IN3/Indian Ocean/ Jason, DSL-120	Fornari, D./WHOI/ OCE-	Seychelles	KNORR /NSF/F
	IN3/Indian Ocean/ Jason, DSL-120	Humphris, S./WHOI/ OCE-		/NSF/F
	IN3/Central Ind. R/ Jason, DSL-120, ArgoII	Vrijenhoek, R./ MBARI/OCE9910799		10/NSF/F
6, 7 MAY				
18, 19, 20				
21 APR	NP9/Calif. Coast/	Levin, L/SIO/	Seattle	12/NOAA/F
02 MAY	JASON ROV-methane seep	UAF(CA)-99-15	Seattle	R/V THOMPSON
	Allow four days at homeport to mobilize ROV, before trip.			

?? JUN /Hawaii/ Coffin, R./NRL/ Honolulu xx/DOE/F
 ?? JUL CO2, Jason DE-A126-99FT40623 Honolulu
 Requires large ship, 18 days, un-scheduled at present

17 JUN NP9/Juan de Fuca/ Johnson, P./UW/ Seattle 17/NSF/F
 03 JUL hydrothermal system th OCE-9907212 Seattle Canada
 R/V THOMPSON

ROV Jason--allow 4 days to re-mobe ROV before cruise. This is a continuation of work performed in CY-2000.

16,17,18

19 AUG SP1/Huon Gulf/ Silver, E./UCSC/ Lae, Papua 41/NSF/F
 23 SEP Jason, DSL-120 OCE-9907153 Lae, Papua R/V
 24,25 MELVILLE

25,26,27 Oct

28 OCT /EPR/ Schouten, H./WHOI/ Manzanillo 34/NSF/F
 25 NOV Alvin, DSL-120 OCE-9819261 Manzanillo ATLANTIS
 26, 27 Nov

?? ??? NP9/Juan de Fuca/ Johnson, P./UW/ Seattle /NSF/F
 ?? ??? Jason OCE-9911523 Seattle Canada,
 R/V
 THOMPSON

Lexen program 1st of 2 cruises
 14 days on station, funded
 Un-scheduled at present

Agency	Funded	Proposed	TOTAL
NOAA	17	0	17
NSF	143	0	143
TOTAL	160	0	160



APPENDIX I



Ship Scheduling Review Meeting — Room 340 — Wednesday, Sept 20, 2000

List of Attendees

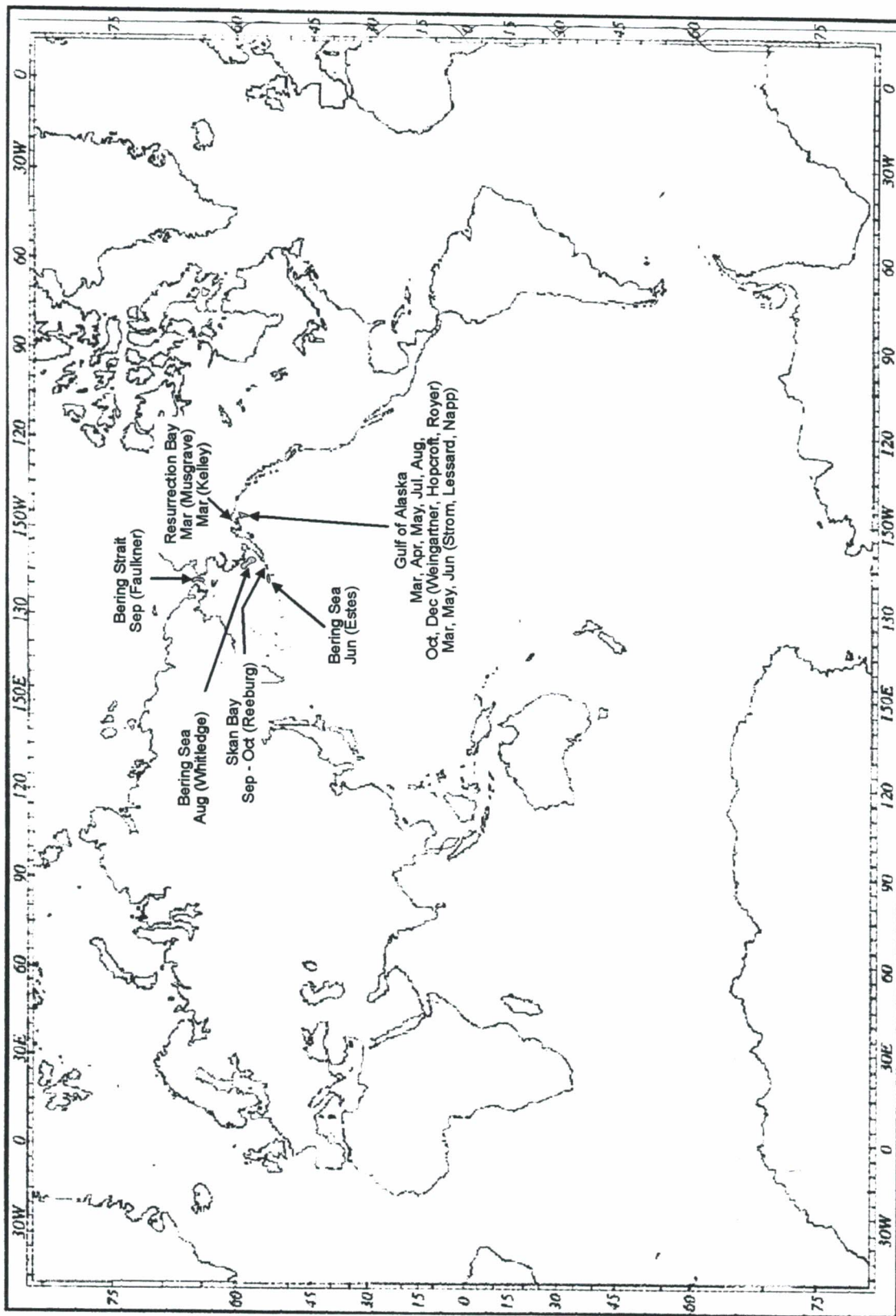
NAME	INST/ORG.	PHONE	FAX	E-MAIL
Alberts, Jon	WHOI	(508) 289-2277	(508) 457-2185	jalberts@whoi.edu
Askew, Tim	HBOI	(561) 465-2400 X262	(561) 465-2116	taskew@hboi.edu
Diebold, John	LDEO	(845) 365-8367	(845) 359-6817	marscico@ldeo.columbia.edu
Gardner, Joan	NRL	(202) 404-1094	(202) 767-0167	gardner@gur.nrl.navy.mil
Knox, Robert	UNOLS	(858) 534-4729	(858) 535-1817	rknox@ucsd.edu
Osgood, Kenric	NOAA	(301) 713-3338X135	(301) 713-4044	Kenric.Osgood@noaa.gov
Pfeiffer, Tim	ONR	(703) 696-6999		Timothy_Pfeiffer@onr.navy.mil
Prince, Mike	UNOLS	(831) 632-4410	(831) 632-4413	office@unols.org
Rabalais, Steve	LUMCON	(504) 851-2808	(504) 851-2863	srabalais@lumcon.edu
Rossmann, Fred	NOAA	(301) 713-2465 X184		Frederick.w.Rossmann@noaa.gov
Schwartz, Dan	UNOLS/UW	(206) 543-5062	(206) 543-6073	schwartz@ocean.washington.edu
Taylor, Paul	NAVO	(228) 688-5843	(228) 688-5602	taylorp@navo.navy.mil
Ustach, Joe	UNOLS	(252) 504-7579	(252) 504-7651	joeu@duke.edu
White, Douglas	UDEL	(302) 645-4225	(302) 645-4007	dw@udel.edu
White, Elizabeth	NOAA	(301)713-3435X135	(301) 713-1541	Elizabeth.white@noaa.gov
Wilkes, Gordon	NAVO	(228) 688-4376	(228) 688-4639	wilkesg@navo.navy.mil
Epp, David	NSF	(703) 292-8582		Depp@nsf.gov
Taylor, Phil	NSF	(703) 306-1587		Prtaylor@nsf.gov
Dieter, Emma	NSF	(703) 306-1576	(703) 306-0390	Edieter@nsf.gov
Smith, Holly	NSF	(703) 306-1576	(703) 306-0390	Hesmith@nsf.gov
Daly, Kendra	NSF	(703) 306-1587		Kdaly@nsf.gov
Itsweire, Eric	NSF	(703) 306-1587		Eitsweir@nsf.gov

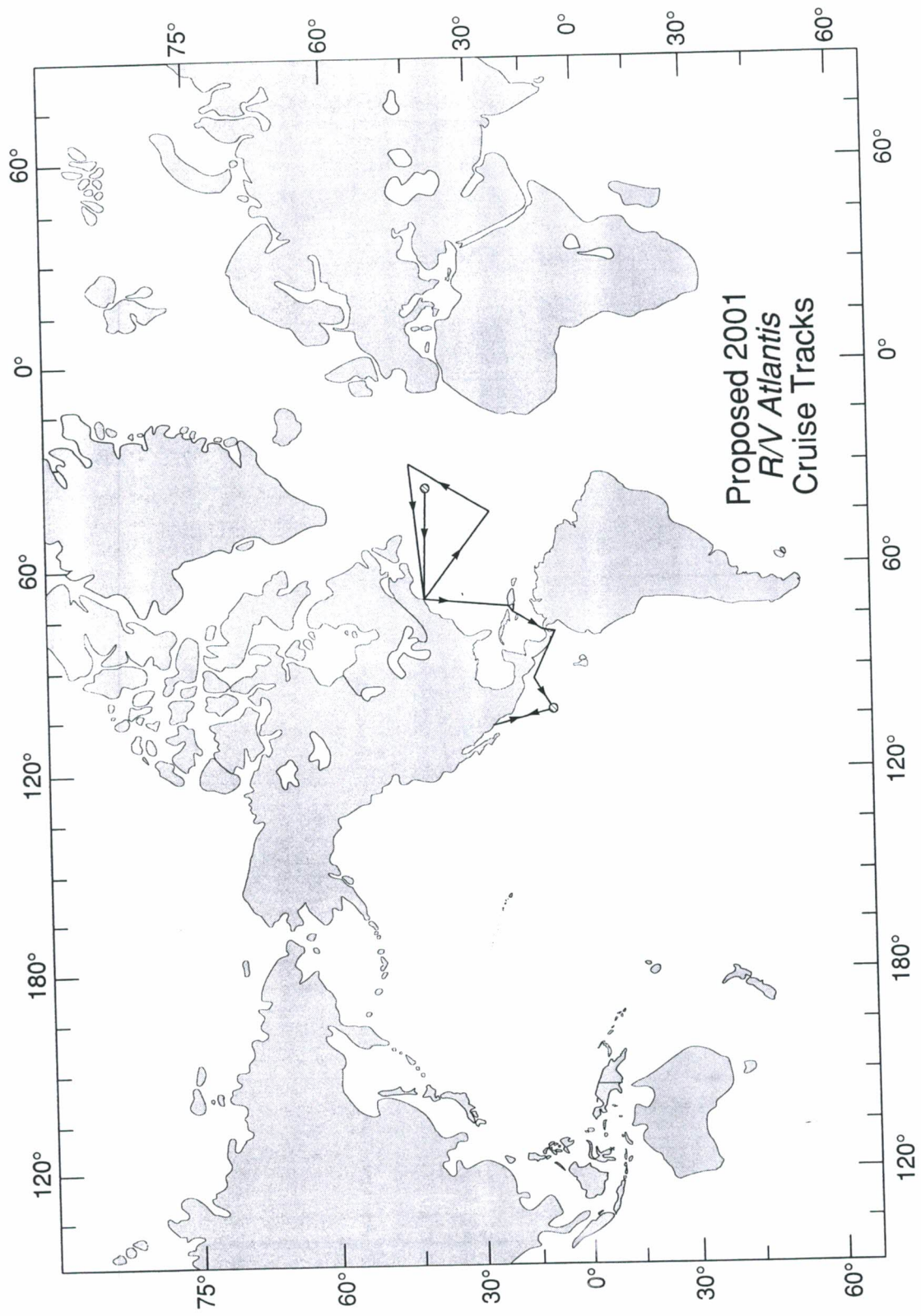


APPENDIX II

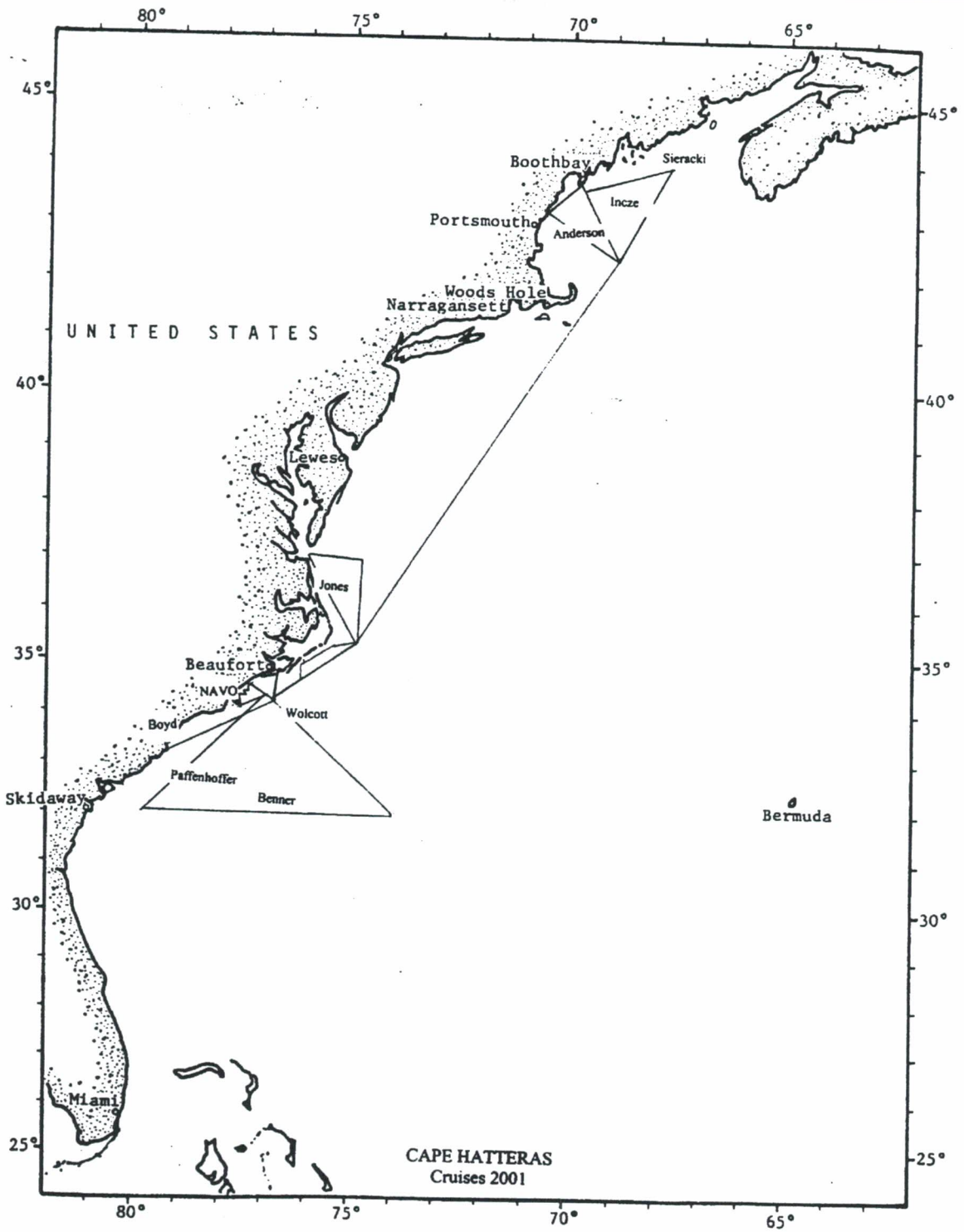


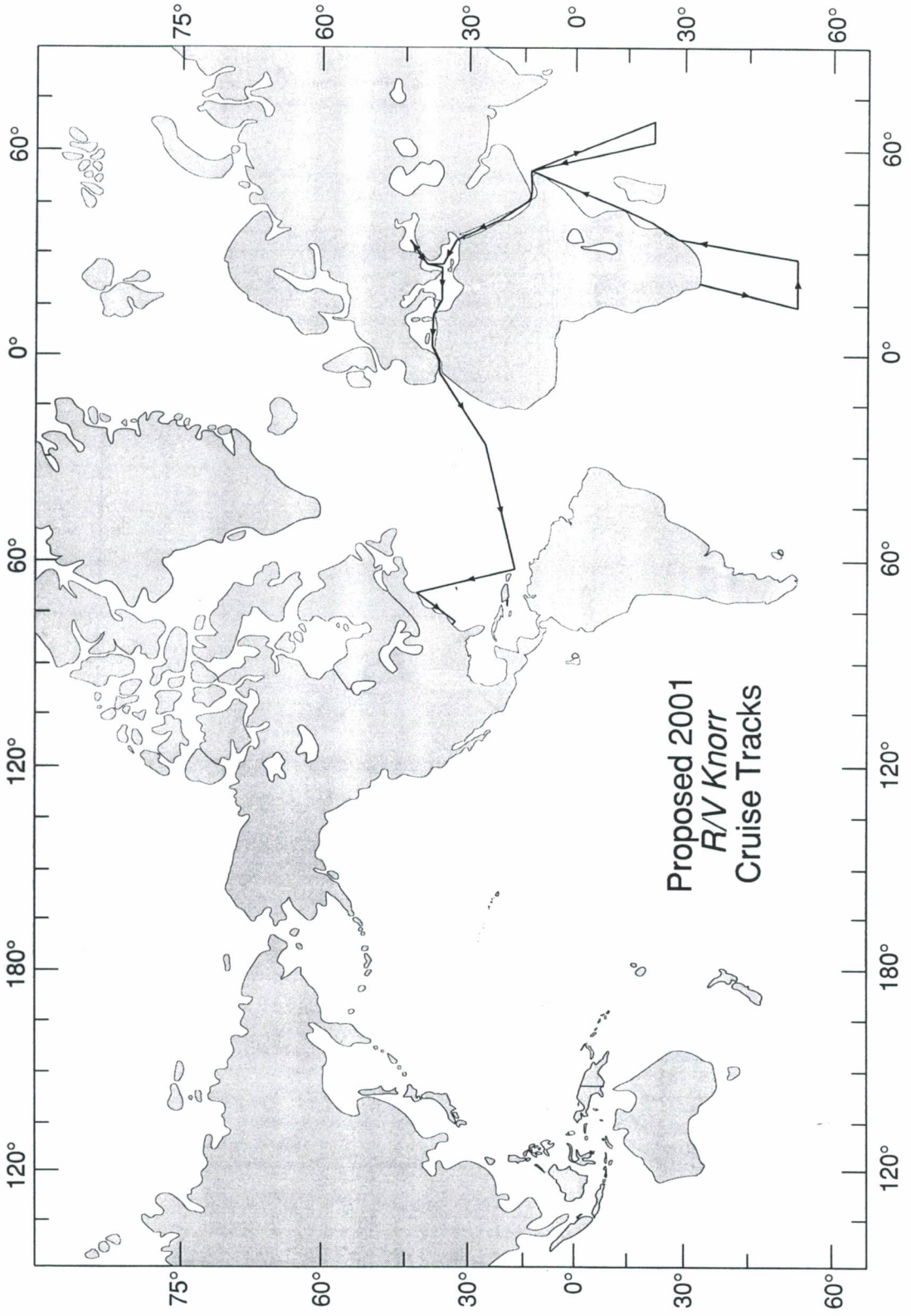
RV Alpha Helix - CY2001





Proposed 2001
R/V Atlantis
Cruise Tracks

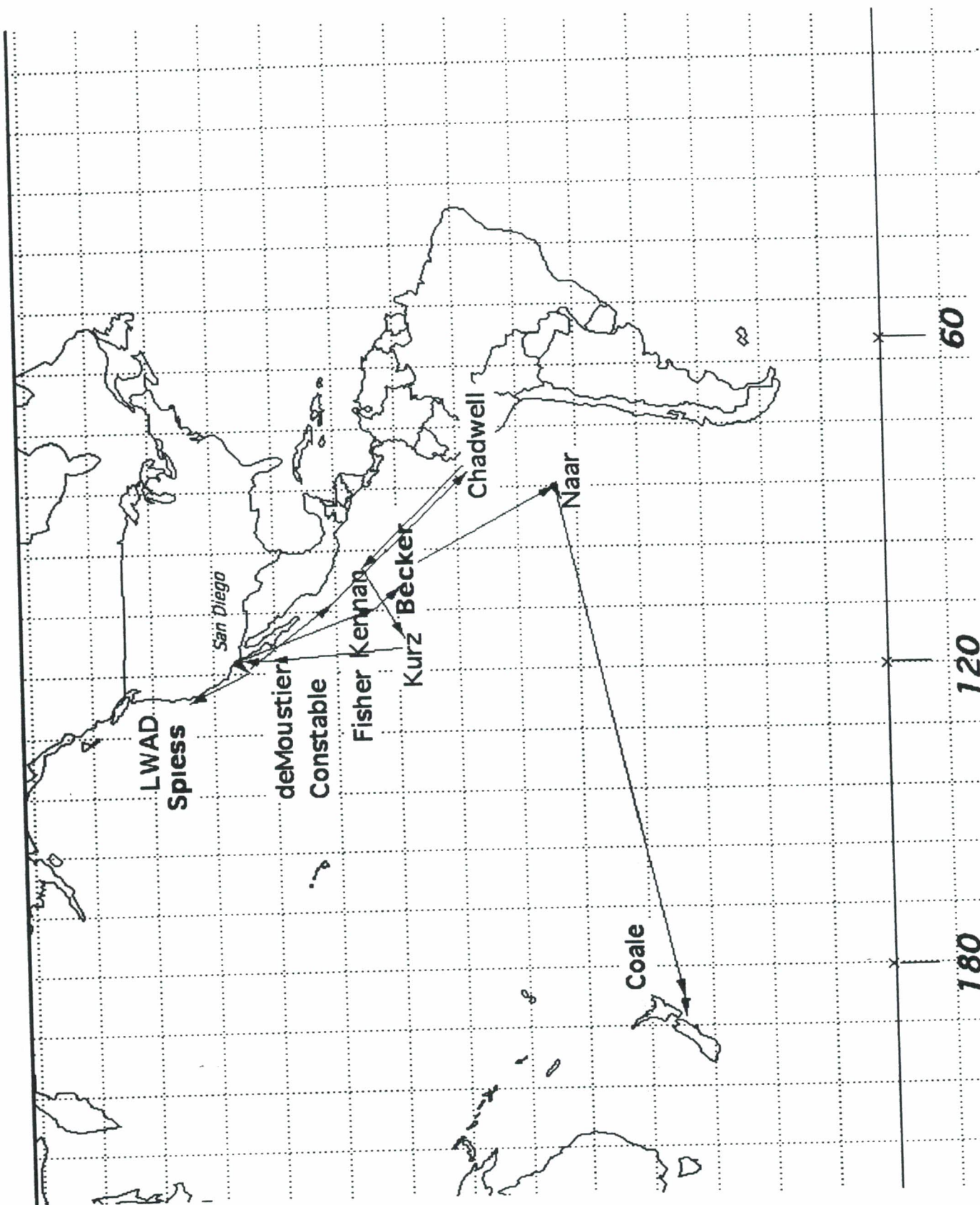






Scripps Institution of Oceanography

R/V Melville 2001



Scripps Institution of Oceanography

R/V Roger Revelle 2000

APPENDIX III



2001 SHIP COSTS

Ship	Sum of Operating Days & Ship Costs				Grant Agency				TOTAL				Daily Rates		
	NAVY	NOAA	NSF	OTHER	NAVY	NOAA	NSF	OTHER	Ship	Tech	Total	Ship	Tech	Total	
Alpha_Helix	0	108	53	27	0	108	53	27	188	9,126	1,103	9,126	1,103	10,229	
Atlantis	33	1	191	0	21,500	4,106,500	0	0	225	21,500	1,820	21,500	1,820	23,320	
Blue_Heron	0	6.5	40	16	26,000	160,000	0	64,000	62.5	4,000	650	4,000	650	4,650	
Cape_Hatteras	36	44	101	11	347,556	797,799	0	86,889	192	7,899	1,018	7,899	1,018	8,917	
Cape_Henlopen	19	22	111	0	143,000	721,500	0	0	152	6,500	1,400	6,500	1,400	7,900	
Clifford_A._Barnes	15	0	42	28	27,000	75,600	0	50,400	85	1,800	1,800	1,800	1,800	1,800	
Edwin_Link	0	0	0	0	0	0	0	0	0	10,200	1,590	10,200	1,590	11,790	
Endeavor	112	0	130	0	1,153,600	1,339,000	0	0	242	10,300	1,900	10,300	1,900	12,200	
Gyre	64	0	10	58	576,000	90,000	0	522,000	132	9,000	450	9,000	450	9,450	
Knorr	55	0	229	0	1,017,500	4,236,500	0	0	284	18,500	1,860	18,500	1,860	20,360	
Laurentian	0	50	45	0	0	0	0	0	95	0	0	0	0	0	
Longhorn	74	0	0	98	296,000	4,686,396	0	392,000	172	4,000	650	4,000	650	4,650	
Maurice_Ewing	10	0	286	0	163,860	3,653,111	0	0	296	16,386	2,381	16,386	2,381	18,767	
Melville	101	0	227	0	1,625,393	1,307,284	0	0	328	16,093	1,949	16,093	1,949	18,042	
New_Horizon	70	0	146	51	626,780	1,881,600	0	456,654	267	8,954	942	8,954	942	9,896	
Oceanus	0	66	192	0	646,800	576,200	0	0	258	9,800	1,600	9,800	1,600	11,400	
Pelican	62	19	134	37	81,700	607,500	45	159,100	252	4,300	650	4,300	650	4,950	
Point_Sur	49	0	81	45	266,600	240,624	8	337,500	175	7,500	1,125	7,500	1,125	8,625	
Robert_Gordon_Sproul	49	0	36	8	367,500	4,210,590	6	53,472	93	6,684	764	6,684	764	7,448	
Roger_Revelle	35	0	267	6	551,950	98,600	14	94,620	308	15,770	1,927	15,770	1,927	17,697	
Sea_Diver	101	20	17	14	585,800	2,656,800	20	81,200	152	5,800	675	5,800	675	6,475	
Seward_Johnson	40	0	246	20	432,000	2,651,715	73	216,000	306	10,800	1,990	10,800	1,990	12,790	
Thomas_G._Thompson	20	12	165	179	321,420	54,528	165	1,173,183	270	16,071	2,550	16,071	2,550	18,621	
Urraca	0	0	14	165	0	264,000	0	642,647	179	3,895	900	3,895	900	3,895	
Walton_Smith	87	62	40	0	574,200	1,335,332	0	0	189	6,600	1,110	6,600	1,110	7,500	
Weatherbird_II	0	0	167	0	0	1,516,634	0	0	167	7,996	1,110	7,996	1,110	9,106	
Wecoma	46	31	127	0	549,332	37,751,491	657	0	204	11,942	2,028	11,942	2,028	13,970	
Grand Total	1078	441.5	3097	657	10,579,815	37,751,491	5273.5	4,576,067	5273.5	56,247,791					

2001 TECH COSTS

Ship	Grant Agency				OTHER			TOTAL	Daily Rates			Total
	NAVY	NOAA	NSF	OTHER	Ship	Tech	Total					
Alpha_Helix	0	108	53	27	188	9,126	1,103	207,364	9,126	1,103	10,229	
Atlantis	33	1	191	0	225	21,500	1,820	409,500	21,500	1,820	23,320	
Blue_Heron	0	6.5	40	16	62.5	4,000	4,225	40,625	4,000	650	4,650	
Cape_Hatteras	36	44	101	11	192	7,899	44,792	195,456	7,899	1,018	8,917	
Cape_Henlopen	19	22	111	0	152	6,500	30,800	212,800	6,500	1,400	7,900	
Clifford_A_Barnes	15	0	42	28	85	1,800			1,800		1,800	
Edwin_Link	0	0	0	0	0	10,200			10,200	1,590	11,790	
Endeavor	112	0	130	0	242	10,300		459,800	10,300	1,900	12,200	
Gyre	64	0	10	58	132	9,000	26,100	59,400	9,000	450	9,450	
Knorr	55	0	229	0	284	18,500		528,240	18,500	1,860	20,360	
Laurentian	0	50	45	0	95	4,000			4,000	650	4,650	
Longhorn	74	0	0	98	172	16,386	63,700	111,800	16,386	2,381	18,767	
Maurice_Ewing	10	0	286	0	296	16,093		704,776	16,093	1,949	18,042	
Melville	101	0	227	0	328	8,954		639,272	8,954	942	9,896	
New_Horizon	70	0	146	51	267	9,800	48,042	251,514	9,800	1,600	11,400	
Oceanus	0	66	192	0	258	4,300		412,800	4,300	650	4,950	
Pelican	62	19	134	37	252	7,500	24,050	163,800	7,500	1,125	8,625	
Point_Sur	49	0	81	45	175	6,684	50,625	196,875	6,684	764	7,448	
Robert_Gordon_Sproul	49	0	36	8	93	15,770	6,112	71,052	15,770	1,927	17,697	
Roger_Revelle	35	0	267	6	308	5,800	11,562	593,516	5,800	675	6,475	
Sea_Diver	101	20	17	14	152	10,800	9,450	102,600	10,800	1,990	12,790	
Seward_Johnson	40	0	246	20	306	16,071	39,800	608,940	16,071	2,550	18,621	
Thomas_G_Thompson	20	12	165	73	270	3,895	186,150	688,500	3,895		3,895	
Urraca	0	0	14	165	179	6,600		170,100	6,600	900	7,500	
Walton_Smith	87	0	40	0	189	7,996		185,370	7,996	1,110	9,106	
Weatherbird_II	0	0	167	0	167	11,942		413,712	11,942	2,028	13,970	
Wecoma	46	31	127	0	204							
Grand Total	1078	441.5	3097	657	5273.5	7,427,812	516,970	7,427,812				

2001 TOTAL COSTS

Ship	Sum of Operating Days & Ship Costs				Grant Agency				TOTAL		Daily Rates		
	NAVY	NOAA	NSF	OTHER	NOAA	NSF	OTHER	TOTAL	Ship	Tech	Total		
Alpha_Helix	0	108	53	27	1,104,732	483,678	276,183	188	9,126	1,103	10,229		
Atlantis	33	1	191	0	23,320	4,106,500	0	225	21,500	1,820	23,320		
Blue_Heron	0	65	40	16	30,225	160,000	74,400	62.5	4,000	650	4,650		
Cape_Hatteras	36	44	101	11	392,348	797,799	98,087	192	7,899	1,018	8,917		
Cape_Henlopen	19	22	111	0	173,800	721,500	0	152	6,500	1,400	7,900		
Clifford_A_Barnes	15	0	42	28	0	75,600	50,400	85	1,800	0	1,800		
Edwin_Link	0	0	0	0	0	0	0	0	10,200	1,590	11,790		
Endeavor	112	0	130	0	0	1,339,000	0	242	10,300	1,900	12,200		
Gyre	64	0	10	58	0	90,000	548,100	132	9,000	450	9,450		
Knorr	55	0	229	0	0	4,236,500	0	284	18,500	1,860	20,360		
Laurentian	0	50	45	0	0	0	0	95	0	0	0		
Longhorn	74	0	0	98	0	0	455,700	172	4,000	650	4,650		
Maurice_Ewing	10	0	286	0	0	4,686,396	0	296	16,386	2,381	18,767		
Melville	101	0	227	0	0	3,653,111	0	328	16,093	1,949	18,042		
New_Horizon	70	0	146	51	0	1,307,284	504,696	267	8,954	942	9,896		
Oceanus	0	66	192	0	752,400	1,881,600	0	258	9,800	1,600	11,400		
Pelican	62	19	134	37	94,050	576,200	183,150	252	4,300	650	4,950		
Point_Sur	49	0	81	45	0	607,500	388,125	175	7,500	1,125	8,625		
Robert_Gordon_Sprout	49	0	36	8	0	240,624	59,584	93	6,684	764	7,448		
Roger_Revelle	35	0	267	6	0	4,210,590	106,182	308	15,770	1,927	17,697		
Sea_Diver	101	20	17	14	129,500	98,600	90,650	152	5,800	675	6,475		
Seward_Johnson	40	0	246	20	0	2,656,800	255,800	306	10,800	1,990	12,790		
Thomas_G_Thompson	20	12	165	73	223,452	2,651,715	1,359,333	270	16,071	2,550	18,621		
Urraca	0	0	14	165	0	54,528	642,647	179	3,895	0	3,895		
Walton_Smith	87	62	40	0	465,000	264,000	0	189	6,600	900	7,500		
Weatherbird_II	0	0	167	0	0	1,335,332	0	167	7,996	1,110	9,106		
Wecoma	46	31	127	0	433,070	1,516,634	0	204	11,942	2,028	13,970		
Grand Total	1078	441.5	3097	657	3,821,897	37,751,491	5,093,037	5273.5	11,942	2,028	13,970		

2000 SCHEDULE SUMMARY

Sum of Operating Days	Grant Agency											USGS	Grand Total
	EPA	NASA	NAVY	NOAA	NPS	NSF	ONR	Other	PRIVATE	STATE	USGS		
ship				48	34			2		40			124
Alpha_Helix 2000 Schedule				36	255			4					297
Atlantis 2000 Schedule	2		40	10	26					21			99
Barnes 2000 Schedule			11	26	80				1				124
Blue_Fin 2000 Schedule		5		6	59				0.5				86.5
Blue_Heron 2000 Schedule			47	38	86					16		9	199
Cape_Hatteras 2000 Schedule		3			142		4						184
Cape_Henlopen 2000 Schedule			38		50		62			10			169
Edwin_Link 2000 Schedule			47		78							5	183
Endeavor 2000 Schedule			95	5	9		81			18			175
Gyre 2000 Schedule			67		208		0						274
Knorr 2000 Schedule			66		199								199
Laurentian 2000 Schedule					20		7		6	38			101
Longhorn 2000 Schedule			30		267								270
Maurice_Ewing 2000 Schedule	3				236		0			5			259
Melville 2000 Schedule				18	19		18			38			185
New_Horizon 2000 Schedule			52	58	59		0						112
Oceanus 2000 Schedule			53		56								251
Pelican 2000 Schedule			67	46	17		82						184
Point_Sur 2000 Schedule			3		65		2		1	13			93
Robert_Gordon_Sproul 2000 Schedule			26		20		11			32		4	296
Roger_Revelle 2000 Schedule			95		201		0						162
Sea_Diver 2000 Schedule		11	74	16	47		14						259
Seward_Johnson 2000 Schedule			50	79	125		5			55			172
Thomas_G_Thompson 2000 Schedule			14	13	90		0						120
Uracca 2000 Schedule			54	55	35		105						154
Walton_Smith 2000 Schedule					128		10						128
Weatherbird_II 2000 Schedule					95		67						183
Wecoma 2000 Schedule			21										
Grand Total	5	2	19	950	454	17	2704	2	555	8.5	308	18	5042.5