2002 Voyage Statistics

R/V Atlantis & DSV Alvin

Total Nautical Miles in 2002–25,564 **Total *Alvin* Dives in 2002–135** **Total Days at Sea–234 days, 21 hours, 42 minutes**

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
7-VI	06 Jan - 10 Feb	Sample hydrothermal fluids on the East Pacific Rise for studies of the composition of vent fluids and associated animal communities. 25 *Alvin* dives. 21°N and 109°W; 9°N and 104°W.	San Diego, CA	K. VonDamm (UNH)
7-VII	12 Feb - 12 Feb	Sea trial for ship's machinery plant.	San Diego, CA	T. Moniz (WHOI)
	13 Feb – 17 Mar	Maintenance.	San Diego, CA	
7-VIII	18 Mar – 19 Mar	IMAX camera photography of DSV *Alvin* during launch and recovery operations. West of San Diego harbor entrance. 2 *Alvin* dives.	San Diego, CA	R. Lutz (Rutgers)
	20 Mar – 17 Apr	Maintenance.	San Diego, CA	
7- IX	18 Apr – 20 Apr	Engineering sea trials for the main propulsion plant. 2 *Alvin* dives.	San Diego, CA	J. Coburn (WHOI)
7-X	22 Apr – 23 Apr	IMAX camera photography of DSV *Alvin* during launch and recovery operations. Shallow waters near Catalina Island. 3 *Alvin* dives.	San Diego, CA	R. Lutz (Rutgers)
7-XI	26 Apr – 11 May	Study the results of hydrothermally injected ammonia in the water column and the microbial geochemical processes that control it. 7 *Alvin* dives and 5 days of CTD work. Guaymas Basin near 27.0333°N and 111.40°W.	Manzanillo, Mexico	J. Cowen (U. Hawaii)
7-XII	14 May – 23 May	Ground truth November 2001 survey results with *Alvin* dives, explore evidence of off-axis hydrothermal vent activity and its structural setting; CTD casts, rock dredges and cores. 4 *Alvin* dives. East Pacific Rise in the vicinity of 9.9167°N, 104.1667°W, and 9.4667°N, 104.55°W.	Galápagos Islands	H. Schouten (WHOI)

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
7-XIII	24 May – 4 June	Assess temporal and spatial changes among vent faunal assemblage; observe variations in fluid chemistry, sulfide mineralogy, and fluid nutrition properties; explore Galápagos Rift for new vent sites; develop a comprehensive model of vent community succession. Camera tows, *ABE* deployments, CTD casts, rock dredging, and coring. 9 *Alvin* dives. Galápagos Rift near 0.6667 to 0.8333°N and 86.0 to 89.5°W.	Puerto Ayora, Santa Cruz Island, Galápagos Islands	S. Hammond (NOAA-PMEL) T. Shank (WHOI)
7-XIV	5 Jun – 18 Jun	Transit from Puerto Ayora, Galápagos Islands, to Astoria, Oregon.	Astoria, OR	D. Sims (WHOI)
	19 Jun – 21 Jun	Navy inspection.		
7-XV	22 Jun – 3 Jul	Study golden (*Lithodes aesquispina*) and scarlet (*Lithodes couesi*) king crabs and collect deep-sea stony corals and gorgonins. CTD casts, rock dredges, and gravity cores. 7 *Alvin* dives. Gulf of Alaska seamounts in the vicinity of 53.9167°N, 148.5°W; 54.5°N, 150.5°W; and 54.9167°N, 152.0°W.	Kodiak Island, AK	B. Stevens (NMFS Kodiak Fisheries Research Center)
7-XVI	4 Jul – 15 Jul	SeaBeam survey of seamounts and collection of deep-water corals for development of population genetic markers and study of coral population genetics. CTD casts, rock dredges, and gravity cores. 6 *Alvin* dives. Gulf of Alaska seamounts in the vicinity of 48° to 55°N and 132° to 155°W, in the area of Marchand, Chirikof, Patton-Murray, Campbell, and Warwick Seamounts.	Astoria, OR	R. Keller (Ore. State U.)
7-XVII	19 Jul – 22 Jul	Engineering sea-trial for remotely operated vehicle *Jason II*. CTD casts and SeaBeam survey. 1 *Alvin* dive.	Astoria, OR	A. Bowen (WHOI)
7-XVIII	26 Jul – 31 Jul	Collect natural gas hydrates, sediment cores, and pore fluids. 4 *Alvin* dives and CTD casts to 1,100 meters. 44.5°N, 125.1667°W.	Astoria, OR	M. Kastner (Scripps)
7-XIX	4 Aug – 24 Aug	Collect samples of hydrothermal fluids for analysis of chemical constituents, measure microbial removal of ammonia and methane, and study effects of microbial activity on rates of basalt alteration on the ocean floor. 13 *Alvin* dives. 5 days of CTD station work. Juan de Fuca Ridge, 48°N, 129°W; 46.5°N, 129.633°W.	Astoria, OR	J. Cowen (U. Hawaii)

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
7-XX	29 Aug – 23 Sep	Life in Extreme Environments (LEXEN) cruise: Sample uncontaminated crustal fluids from several hydrothermal vents for microbial, organic, and inorganic chemical analysis; deploy larvae settling experiments; recover osmium fluid samples; and recover vent monitors and sample vent fluids for natural tracer experiments. *Jason II* operations, CTD casts, piston coring, and SeaBeam survey. Northern Juan de Fuca Ridge, 46° to 48°N and 123° to 130°W.	Newport, OR	H.P. Johnson (U. Wash)
7-XXI	27 Sep – 3 Oct	Long-Term Observation Program (LTOP) cruise for Global Ocean Ecosystems Dynamics (GLOBEC) Northeast Pacific Program. Hydrographic sampling at five zonal sections across the continental margin, CTD rosette casts, MOCNESS tows, vertical tows with small zooplankton nets, underway tows of HTI acoustic array, and continuous Acoustic Doppler Current Profiler (ADCP) surveys. Out to 85 nautical miles off Oregon Coast from 42° to 45°N and 124° to 126°W.	Newport, OR	A. Huyer (Ore. State U.)
7-XXII	6 Oct – 9 Oct	GLOBEC Northeast Pacific LTOP cruise. Recover and redeploy moorings, CTD rosette and hydrographic casts, and recover a benthic ADCP. Out to 85 nautical miles off Oregon Coast from 42° to 45°N and 124° to 126°W.	Newport, OR	P. Kosro (Ore. State U.)
7-XXIII	11 Oct – 15 Oct	Transit.	San Diego, CA	C. Van Hilst (WHOI)
7-XXIV	21 Oct – 12 Nov	Study the metabolic potential of primary members of a bacterial community associated with tube-dwelling *Alvinella pompejana* and the microbial ecology of filamentous sulfur formation. 12 *Alvin* dives. East Pacific Rise near 9.7667°N, 104.2833°W.	Puntarenas, Costa Rica	C. Cary (U. Del.)
7-XXV	16 Nov – 22 Nov	Operations at two Ocean Drilling Program boreholes, sites 504B and 896A, and complete new borehole installation at site off Costa Rica. 2 *Alvin* dives. 1.2166°N, 83.7°W and offshore Nicoya Peninsula at 9.633°N, 86.183°W.	Puntarenas, Costa Rica	K. Becker (U. Miami)
7-XXVI	26 Nov – 22 Dec	In situ habitat characterizations, biological sampling, and testing the hypothesis that *Riftia pachyptila* is an environmentally transmitted bacterial symbiont. 18 *Alvin* dives. East Pacific Rise in the vicinity of 9°N, 104°W.	Puntarenas, Costa Rica	C. Fisher (Penn State)

7-XXVII	24 Dec – 1 Jan 2003	Transit Panama Canal.	Miami, FL	M. Brennan (WHOI)

2002 Voyage Statistics

R/V Knorr

Total Nautical Miles in 2002 – 20,051 NM Total Days at Sea – 225 days, 13 hours, 30 minutes

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
166-I	30 Dec – 03 Jan 2002	Test Acoustic Doppler Current Profiler (ADCP) during transit.	Fort Lauderdale, FL	F. Bahr (WHOI)
166-II	05 Jan – 25 Jan	Collect materials to reconstruct fluctuations in the strength of the Gulf Stream during the Holocene. Jumbo piston, gravity, multi-, and box coring, CTD casts, and SeaBeam surveys. Great Bahama Bank in the vicinity of 24°N, 79 to 84°W.	Fort Lauderdale, FL	W. Curry (WHOI) J. Lynch-Stieglitz (LDEO)
166-III	2 Feb – 3 Feb	Sea trial.	Fort Lauderdale, FL	J. Weingart (JHU)
166-IVA 166-IVB	4 Feb – 7 Feb 7 Feb – 23 Feb	Conduct multiple-platform exercise known as ARDENT/RPS-1 for acoustic measurements. Deploy towed acoustic arrays, deploy and recover thermistor mooring, CTDs, ADCP surveys, and XBTs. Straits of Florida in the vicinity of 23.75°N, 85.283°W.	Fort Lauderdale, FL	J. Weingart (JHU)
166-V	26 Feb – 27 Feb	Transit to shipyard for maintenance.	Jacksonville, FL	
	28 Feb – 11 Mar	Shipyard maintenance period.	Jacksonville, FL	
166-VI	12 Mar – 17 Mar	Transit to Pointe-a-Pitre, Guadeloupe.	Pointe-a-Pitre, Guadeloupe	R. Laird (WHOI)
166-VII	21 Mar – 14 Apr	Quantify deep oceanic circulation in the Guiana Basin. CTD casts to 6,000 meters and SeaBeam and ADCP surveys. Guiana Basin and Vema Fracture Zone, 11° to 16°N and 40° to 60°W.	Bridgetown, Barbados	C. Mauritzen (WHOI)
166-VIII	17 Apr – 2 May	Quantify deep oceanic circulation in the Guiana Abyssal Gyre and the Vema Fracture Zone. CTD casts to 6,000 meters, SeaBeam and ADCP surveys, and mooring operations. Guiana Basin and Vema Fracture Zone, 10° to 16°N and 42° to 59°W.	Pointe–a-Pitre, Guadeloupe	M. McCartney (WHOI)
166-IX	3 May – 9 May	Transit to Atlantic Drydock Shipyard.	Jacksonville, FL	
	10 May – 13 May	Shipyard.	Jacksonville, FL	

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
166-X	14 May – 26 May	Transit.	Reykjavik, Iceland	
166-XI	30 May – 1 Jul	Study interactions of Arctic Ocean outflow and Nordic Sea waters as they create the Denmark Strait. Two-ship operation with Swedish Research Vessel *Oden*. 150 surface-to-bottom CTD casts (0-4,000 meters). Ice-free portion of the Norwegian Sea from 60° to 80°N and 20°E to 30°W.	Glasgow, Scotland	W. Smethie (LDEO)
166-XII	8 Jul – 24 Jul	Oceanographic and acoustic survey for multi-national technology research and development program. CTDs, ADCP survey, deploy deep water mooring and vertical line array, and conduct instrument well sonar tests. 56°N, 8.5°W.	Glasgow, Scotland	J. Hanson (JHU)
166-XIII	29 Jul – 1 Aug	Transit.	Reykjavik, Iceland	A. Simoneau (WHOI)
166-XIV	3 Aug – 9 Sep	Study architecture and paleoceanography of North Atlantic sediment drifts using high-resolution, multi-channel seismic profiling, SeaBeam mapping, 3.5 kHz echo-sounding, and jumbo piston and gravity coring. 55° to 62°N, 20° to 49°W.	Reykjavik, Iceland	G. Mountain (LDEO)
166-XV	11 Sep – 19 Sep	Transit.	Woods Hole, MA	
167	27 Sep – 27 Sep	Test dynamic positioning system and POS MV navigation system, adjust magnetic compass.	Woods Hole, MA	B. Walden (WHOI)
168A 168B	28 Sep – 29 Sep 30 Sep – 17 Oct	Stratigraphic studies of the New Jersey Shelf with seafloor drilling and benthic coring using next generation of the GLAD 800, an active heave compensation drill rig. In the vicinity of 39.33°N, 73°W.	Woods Hole, MA	C.Alexander (Skidaway) J. Austin (U. Texas)
169	23 Oct – 23 Oct	INSURV sea trial.	Woods Hole, MA	J. Coburn (WHOI)
170-I	4 Nov – 7 Nov	Transit to Detyens Shipyard in North Charleston, SC.	N. Charleston, SC	
	8 Nov – 15 Dec	Shipyard. .	N. Charleston, SC	
170-II	16 Dec – 19 Dec	Transit to Woods Hole.	Woods Hole, MA	

2002 Voyage Statistics

R/V Oceanus

Total Nautical Miles in 2002 - 21,552 **Total Days at Sea - 165 days, 20 hours, 30 minutes**

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
	01 Jan – 18 Feb	In port.	Woods Hole, MA	
373	19 Feb – 25 Feb	Engineering tests of second-generation Video Plankton Recorder (VPR). Tow VPR, collecting current data from ADCP and bathymetry from PDR. Block Canyon near 39°N, 70°W .	Woods Hole, MA	C. Davis (WHOI)
374	1 Mar – 14 Mar	Examine relationships among growth rate, grazing mortality, and relative abundance for two pico-phytoplankton groups. CTD casts to 4,000 meters and drogue deployments. Sargasso Sea in the vicinity of 32°N, 64°W.	Woods Hole, MA	B. Binder (U. Georgia)
375	18 Mar – 30 Mar	Diel sampling of near surface waters to assess species diversity and distribution of growth rates among eukaryotic phytoplankton. CTD casts, on-deck incubations, and drogue deployments. On continental shelf and out into the Sargasso Sea.	Woods Hole, MA	R. Olson (WHOI)
376-I	5 Apr – 20 Apr	Study the biogeochemistry of organic sulfur compounds including DMSP, DMS, and methanethiol. CTD underwater radiometer casts and deploy Free-Floating Quartz Tube array. Gulf of Maine and continental shelf along a route toward Bermuda.	Morehead City, NC	R. Kiene (U. South Alabama)
376-II	24 Apr – 1 May	Collect benthic foraminifera from intermediate-depth waters off the coast of the Carolinas to determine which species are reliable tracers of bottom water chemistry. CTD casts and benthic sampling with multi-, Soutar box, and gravity corers. 32°N,79°W and 35°N, 75°W.	Morehead, City, NC	J. Bernhard (U. South Carolina)
376-III	3 May – 5 May	Transit.	Woods Hole, MA	S. Carton (WHOI)
377	13 May – 15 May	Study of slope water dynamics and climate on millennial to centennial time scales. CTD, gravity, and multicoring casts. Jordan Basin, 43.5°N, 67.33°W, and La Have Basin, 43.767°N,67.333°W.	Woods Hole, MA	L. Keigwin (WHOI)

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
378	23 May – 27 May	Engineering test of ONR Five Octave Research Array, CTD casts. Atlantis Canyon, in the vicinity of 39.833°N, 70.167°W.	Woods Hole, MA	J. Preston (Penn State)
379	1 Jun – 14 Jun	Study salp species *Salpa aspera* and *Thalia democratica*: feeding, metabolism, growth, reproduction, and population dynamics. CTD casts, Tucker trawls, bongo nets, and scuba diving operations for salp collection. Shelf and slope break from Cape May to Cape Hatteras.	Woods Hole, MA	L. Madin (WHOI)
	15 Jun – 24 Jun	Maintenance.	Woods Hole, MA	
380-I	25 Jun – 6 Jul	Transit.	Glasgow, Scotland	
380-II	9 Jul – 23 Jul	Oceanographic and acoustic survey for multi-national technology research and development program. Deploy acoustic array. 56°N, 8.5°W.	Glasgow, Scotland	L. Shores (Marine Acoust. Inc.)
380-III	31 Jul – 3 Aug	Transit.	Reykjavik, Iceland	
380-IV	8 Aug – 20 Aug	Determine if deep convection occurs in the Irminger Sea east of Greenland and study ventilation of the North Atlantic circulation. Recover and redeploy two CTD moored profilers, CTD and ADCP profiles, and gravity coring. 60.0°N, 35.0°W.	Reykjavik, Iceland	G. Tupper (WHOI)
380-V	23 Aug – 7 Sep	Recover, service, and redeploy two hydrophone moorings. Mid-Atlantic Ridge at 31.85°N, 34.4167°W and 34.333°N, 45.0°W.	Woods Hole, MA	R. Dziak (Ore. State U.)
381	15 Sep – 27 Sep	Study salp species, *Salpa aspera* and *Thalia democratica*: feeding, metabolism, growth, reproduction, and population dynamics. CTD casts, Tucker trawls, bongo nets, scuba diving, and ROV operations for salp collection. Shelf and slope break from Cape May to Cape Hatteras.	Woods Hole, MA	E. Horgan (WHOI)
382	1 Oct – 14 Oct	Diel sampling of near surface waters to assess species diversity and growth-rates distribution among eukaryotic phytoplankton. CTD and hydro casts, on-deck incubations, and drogue deployments. On continental shelf and out into the Sargasso Sea.	Woods Hole, MA	R. Olson (WHOI)

Voyage	Cruise Period	Cruise Objective/Area of Operation	Ports of Call	Chief Scientist
383	17 Oct – 21 Oct	Continue data collection at the long-term ocean time series Station "W." Recover and redeploy Moored Profiler plus CTD, multicore, and gravity core casts. Continental shelf at 38.5°N, 69.0°W.	Woods Hole, MA	J. Toole (WHOI)
384	24 Oct – 2 Nov	Fisheries habitat mapping survey. Drift vehicle video, photo transects, and benthic fish sampling. Tow two-meter beam and otter trawls, CTD casts, and deploy SeaBoss Drift Imaging System. Mid-Atlantic continental shelf at 39°N, 72.7°W.	Woods Hole, MA	V. Guida (NOAA NMFS)