

The  
**Global**  
**Ocean**  
**Observing**  
**System**  
**(GOOS)**  
Center

*Annual Report*  
*January through December 2000*

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***[www.aoml.noaa.gov/goos](http://www.aoml.noaa.gov/goos)***

# ***Executive Summary***

*Steven K. Cook  
GOOS Center Manager  
NOAA/AOML*

During calendar year 2000 the GOOS Center Global Drifter Program deployed 445 Drifting Buoys, with 236 deployed in the tropical Pacific, 77 in the tropical Atlantic plus 9 WOTAN's for the Hurricane array, 51 in the Indian Ocean and 72 in the southern Ocean. The Upper Ocean Thermal Center SEAS Program globally collected over 100,000 meteorological and 11,000 Expendable Bathythermograph (XBT) observations. Our data tracking activities monitored, in real-time, more than 365,000 wind, air temperature, sea level pressure and sea surface temperature measurements as well as more than 24,000 XBT measurements collected from ships observations and inserted onto the Global Telecommunications System. Additionally we monitored more than 730,000 real-time sea surface temperatures collected by the Global Drifter Center network plus more than 65,000 wind measurements collected by the Tropical Atmosphere-Ocean (TAO) array. These monitoring efforts identified and initiated corrective action for several data drop-outs from several different sources.

The Data Assembly Center of the Global Drifter Program continued to successfully update the research quality database at two-month intervals even with declining personnel resources. The Atlantic XBT Data Assembly Center continued to import real-time data into the database at monthly intervals. We were able to continue XBT support and the upgrading of Drifting Buoys with barometer capability for our international colleagues with the financial help of NOAA's Office of Global Programs. We continued to participate in the DBCP, SOOPIP, VOSCLIM and the Working Group on Automated Systems. The development of AMVER/SEAS 2000 continued under ESDIM support.

# ***GOOS Center Mission***

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***To provide high quality ocean data and products in a timely and cost-effective manner to satisfy NOAA nowcast, forecast, detection, attribution and research mission requirements.***

## **Major GOOS Center Operations**

### **Voluntary Observing Ship (VOS) Program**

The Global Ocean Observing System (GOOS) Center at NOAA's Atlantic Oceanographic and Meteorological Laboratory presently operates a global fleet of about 400 domestic and foreign commercial vessels. The GOOS global fleet mostly represents a subset of the larger National Weather Service Voluntary Observing Ship (VOS) fleet consisting of over 1500 vessels. These vessels voluntarily collect sea surface meteorological, sub-surface expendable bathythermograph, and shipboard thermosalinograph observations. They deploy Drifting Buoys and highly instrumented P-ALACE type floats and sometimes tow Continuous Plankton Recorders. The GOOS global VOS fleet is the mechanism used to collect observations and deploy instrumentation that transmit, in real-time, data to National Centers such as the National Center for Environmental Prediction. In any given year this network provides the following approximate number of observations:

630,000 Sea Surface Temperature Observations from Drifting Buoys  
110,000 Meteorological Observations from VOS  
30,000 Thermosalinograph Observations from VOS  
15,000 Expendable Bathymeterograph Observations from VOS

### **Global Drifter Program (GDP)**

The GOOS Center presently operates a global Drifting Buoy Center that annually deploys, via the (VOS) Program, research vessels and U.S. Navy aircraft, over 400 Drifters in all three ocean basins. These drifters are tracked daily via the ARGOS satellite system. Their positions and sea surface temperatures (and sometimes other parameters) are processed and inserted on to the Global Telecommunications System (GTS) for global distribution. Approximately 630,000 sea surface temperatures are collected annually via this program. Additionally, the GOOS Center performs the added function of a Data Acquisition Center (DAC) for the GDP. When the deployed Drifters are verified as operational

they are reported to the DAC. This effort insures that research quality Drifter data are available from other organizations and countries programs. The Global Drifter Program is a participating member of the Intergovernmental Oceanographic Commission (IOC) - World Meteorological Organization (WMO), Data Buoy Co-operation Panel (DBCP) and as such represents NOAA in this international forum.

### **Expendable Bathythermograph (XBT) Program**

The GOOS Center operates a global XBT Program that utilizes approximately 70 VOS to monitor, on a monthly basis, 26 transects in all three ocean basins. The GOOS Center utilizes Shipboard Environmental data Acquisition Systems (SEAS) hardware/software to collect, quality control and transmit in real-time subsurface oceanographic observations (about 15,000 per year) and sea surface meteorological observations (about 110,000 per year). The XBT is an expendable temperature probe that is manually launched from the bridge wings of commercial vessels approximately 4 times per day, along certain scientifically selected shipping lanes. The data transmitted via the wire link from the XBT probe is stored on the SEAS computer where it is processed and formatted for satellite message transmission. The transmitted data is routed to the GOOS Center where it is further quality controlled and then inserted on to the Global Telecommunication System (GTS) for global distribution. The National Center for Environmental Prediction (NCEP) uses these data for weather and climate forecasting as well as for seasonal, inter-annual and decadal climate research. The XBT program is a participating member of the IOC - WMO, Ship of Opportunity Program Implementation Panel (SOOPIP) and as such represents NOAA in this international forum.

### **Argo Program**

AOML has been funded by the National Oceanographic Partnership Program (NOPP) as part of a larger group to develop the infrastructure for the Argo experiment. Specifically, AOML is to develop the information management methodology for the profiling float experiment. This methodology will take the data from the sensor through a real-time quality control to submission onto the GTS for dissemination to the user community. In addition, delayed mode quality control, data accessibility and network evaluation issues will be addressed and procedures developed and implemented. The principle NOAA user for the float data is the climate forecast group of NCEP. AOML is working with NCEP to develop and implement real-time quality control procedures for the profile data. To satisfy a diverse group of users, data must be provided within 12 hours of collection, 24 hours a day, 7 days a week. Automatic quality control procedures are being developed to meet these requirements.

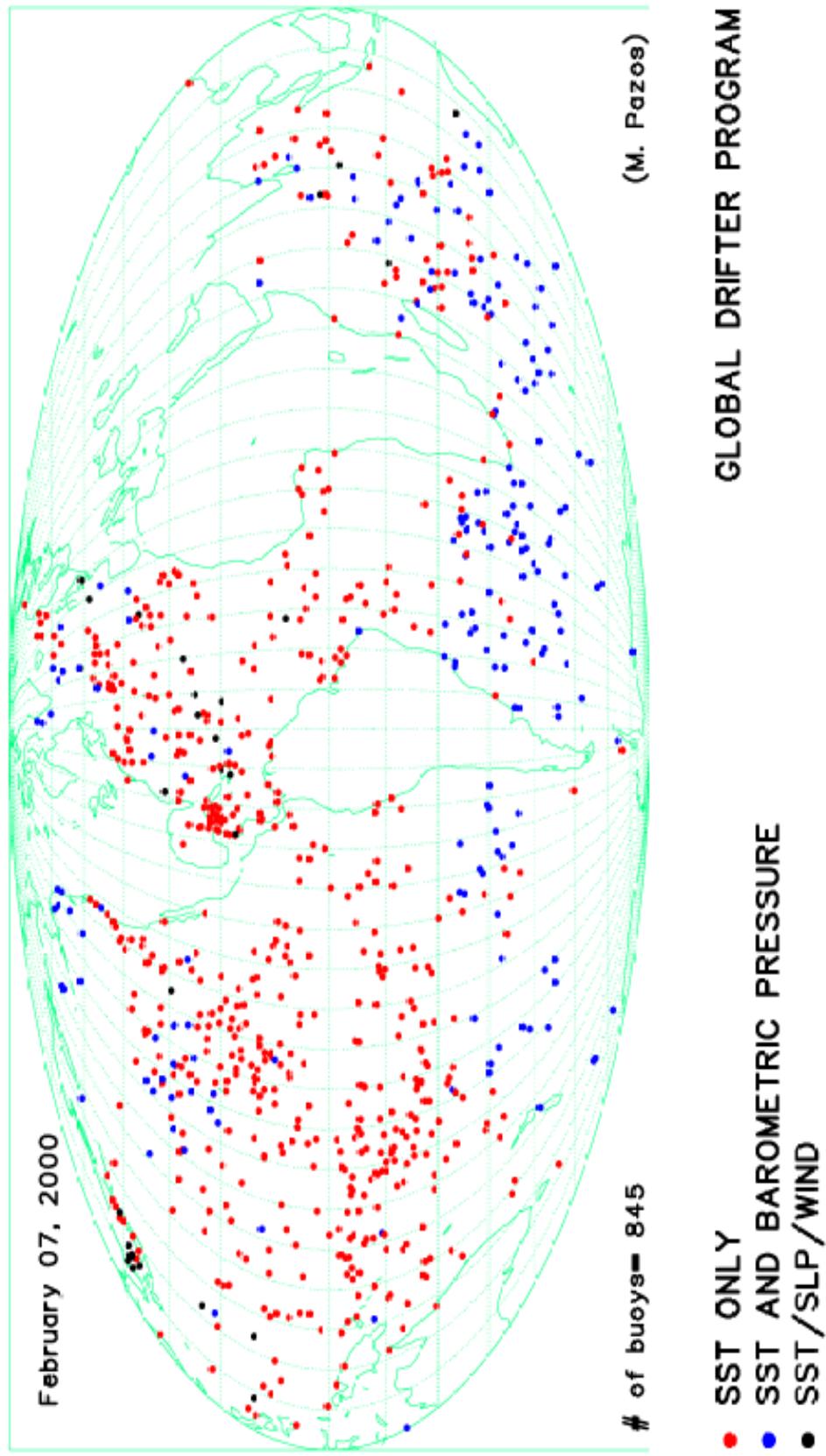
### **High Density XBT/Autolauncher Program**

AOML presently operates a research and developmental High Density XBT/Autolauncher Program utilizing the VOS Program. Two routes (Mediterranean Sea to Miami, FL and New York, NY to San Juan, Puerto Rico) are sampled four times per year by placing ship riders on board to collect XBT temperature data. The XBT probe observations are collected at closely spaced intervals. To enable the ship riders to conduct their operations continuously for the duration of a cruise, engineers at AOML designed an XBT Autolauncher which allows the XBT probes to be launched automatically at preset times and/or positions. In addition to allowing around the clock operations, by deploying XBT probes off the fan tail we reduce potential XBT probe failures. The mission is to measure the seasonal to interannual temperature variability in the upper ocean heat content and transport across the center of the subtropical gyre. This effort will improve our ability to predict important climatic fluctuations such as the North Atlantic Oscillation. Plans are to integrate the Autolauncher System with SEAS 2000 to improve positioning via GPS and facilitate the real-time transmission of these data to the GOOS Center.

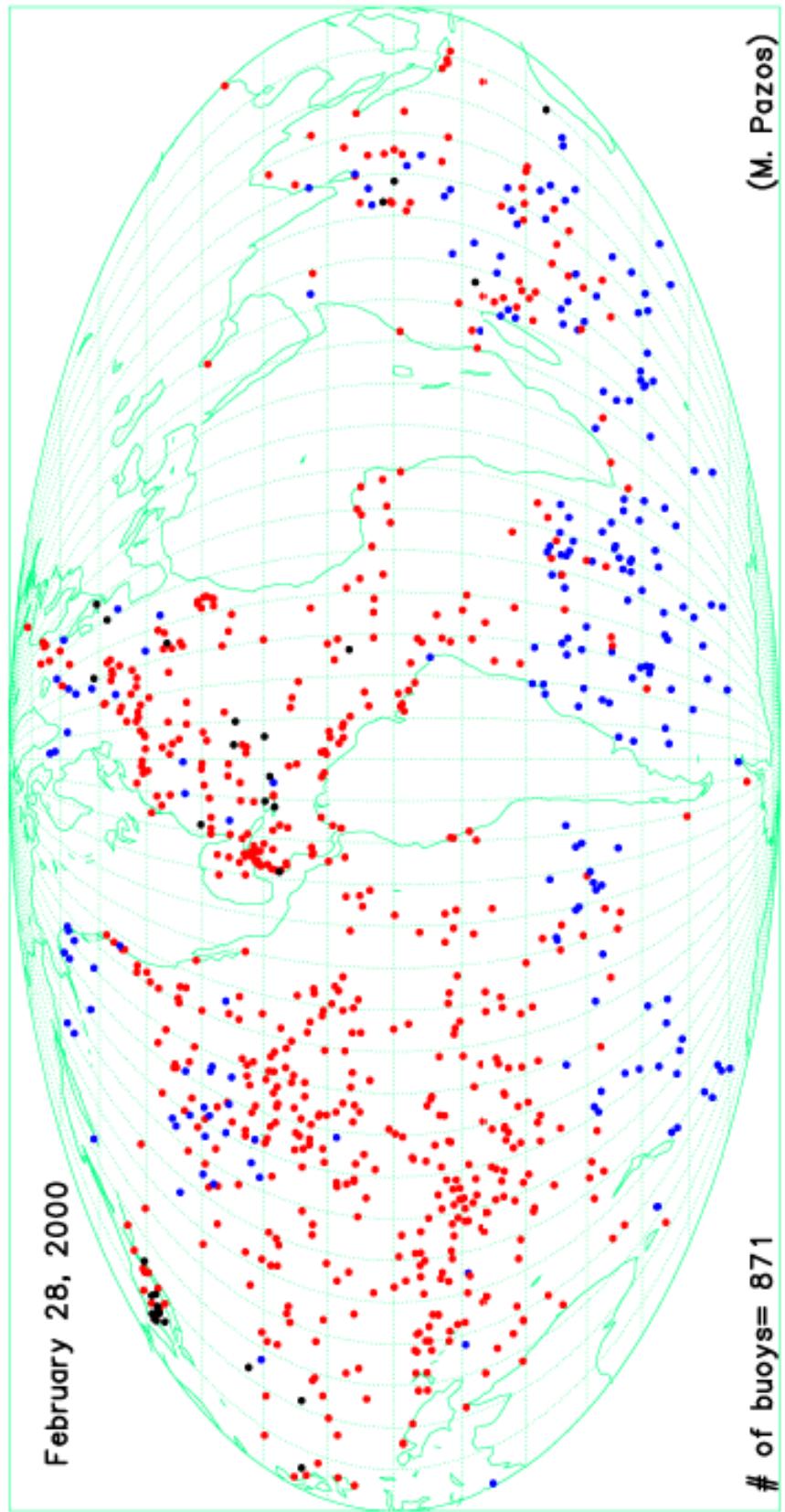
## GOOS Center Products

### *Status of Global Drifter Arrays from January-December 2000*

The number in the lower left corner of the plot indicates the number of drifters that were in the water as of the date listed in the upper left corner.



*Status of Global Drifter Arrays (cont'd)*



- GLOBAL DRIFTER PROGRAM
- SST ONLY
  - SST AND BAROMETRIC PRESSURE
  - SST/SLP/WIND

*Status of Global Drifter Arrays (cont'd)*

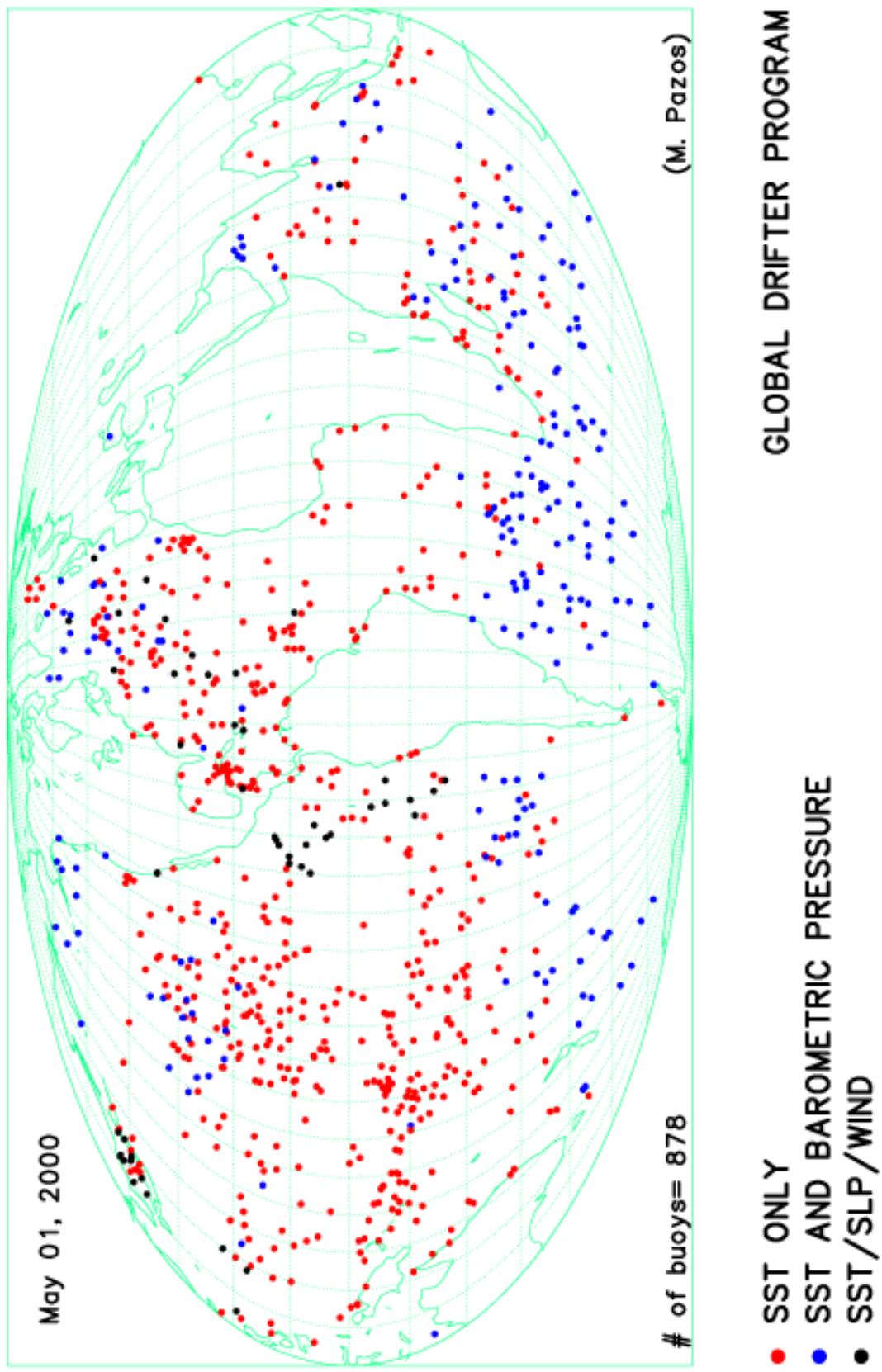
March 27, 2000

# of buoys= 868

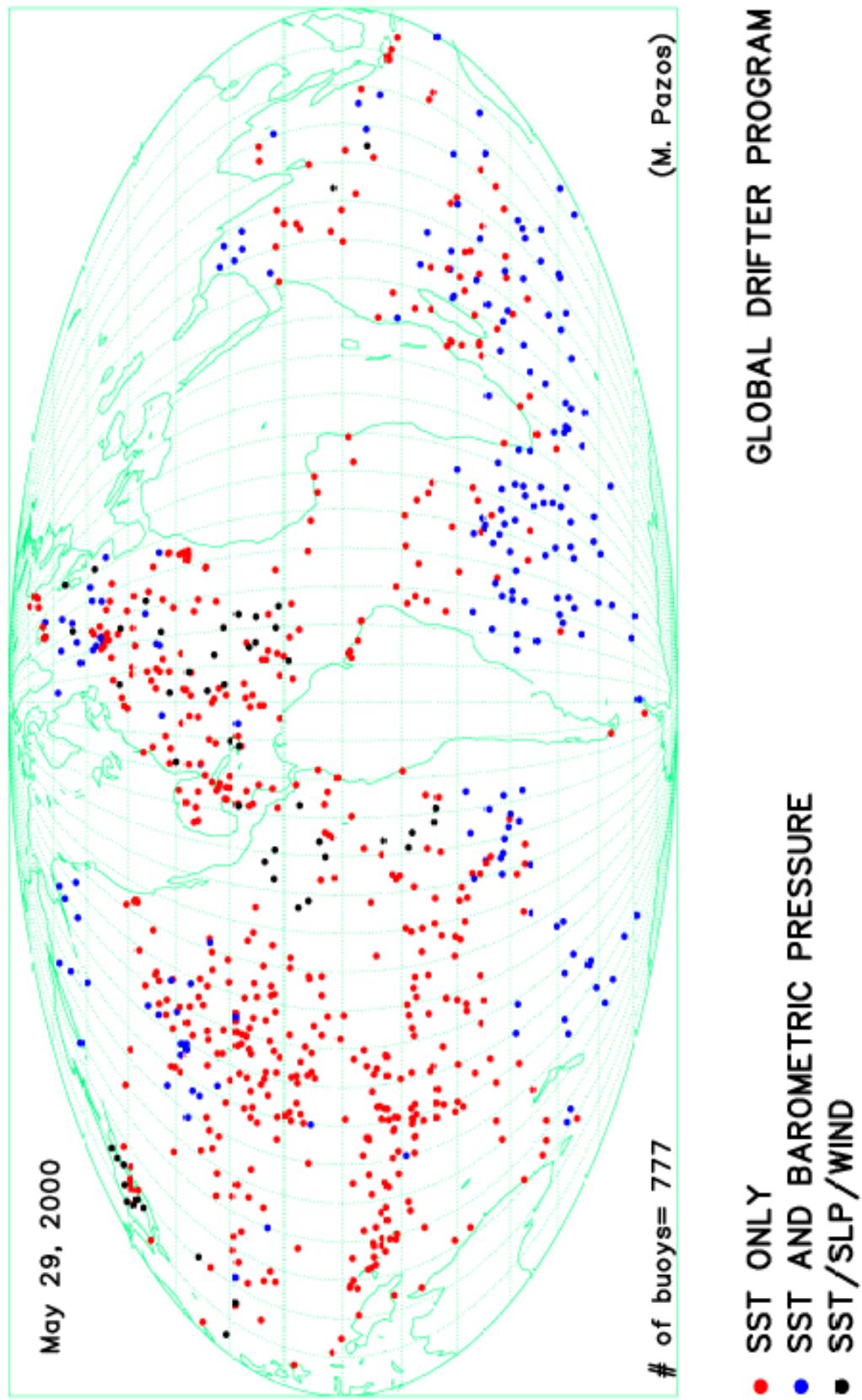
(M. Pazos)

- GLOBAL DRIFTER PROGRAM
- SST ONLY
  - SST AND BAROMETRIC PRESSURE
  - SST/SLP/WIND

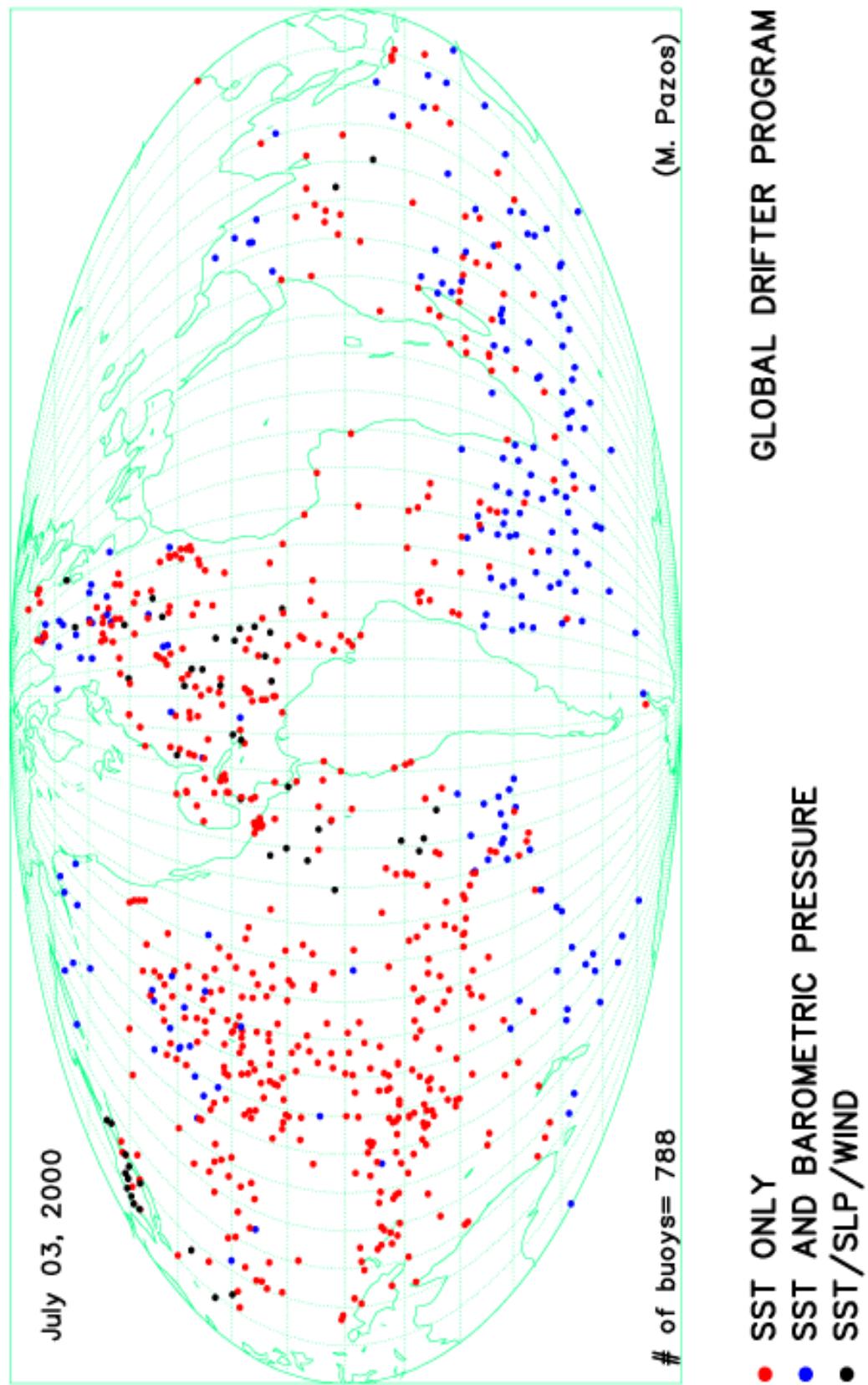
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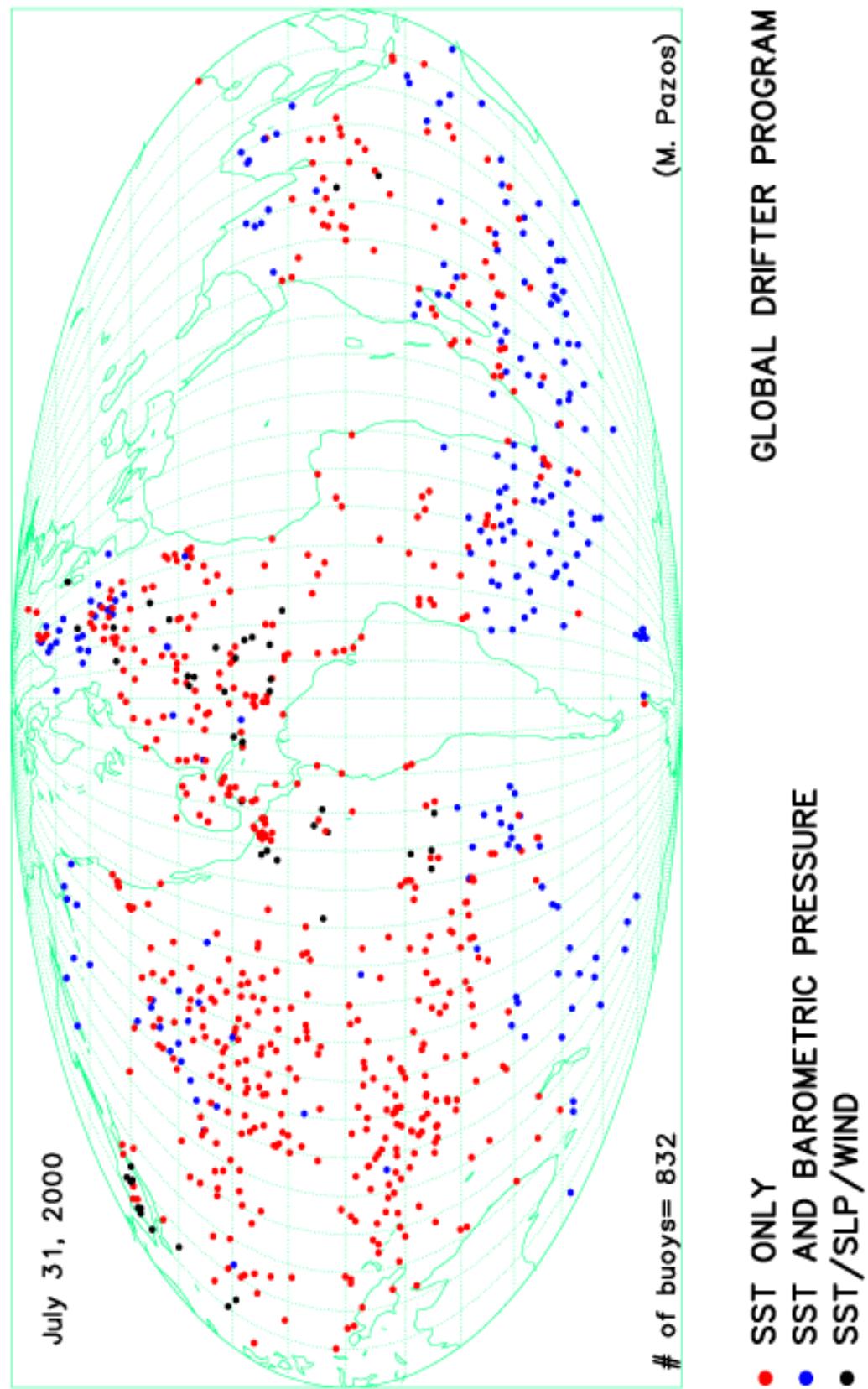
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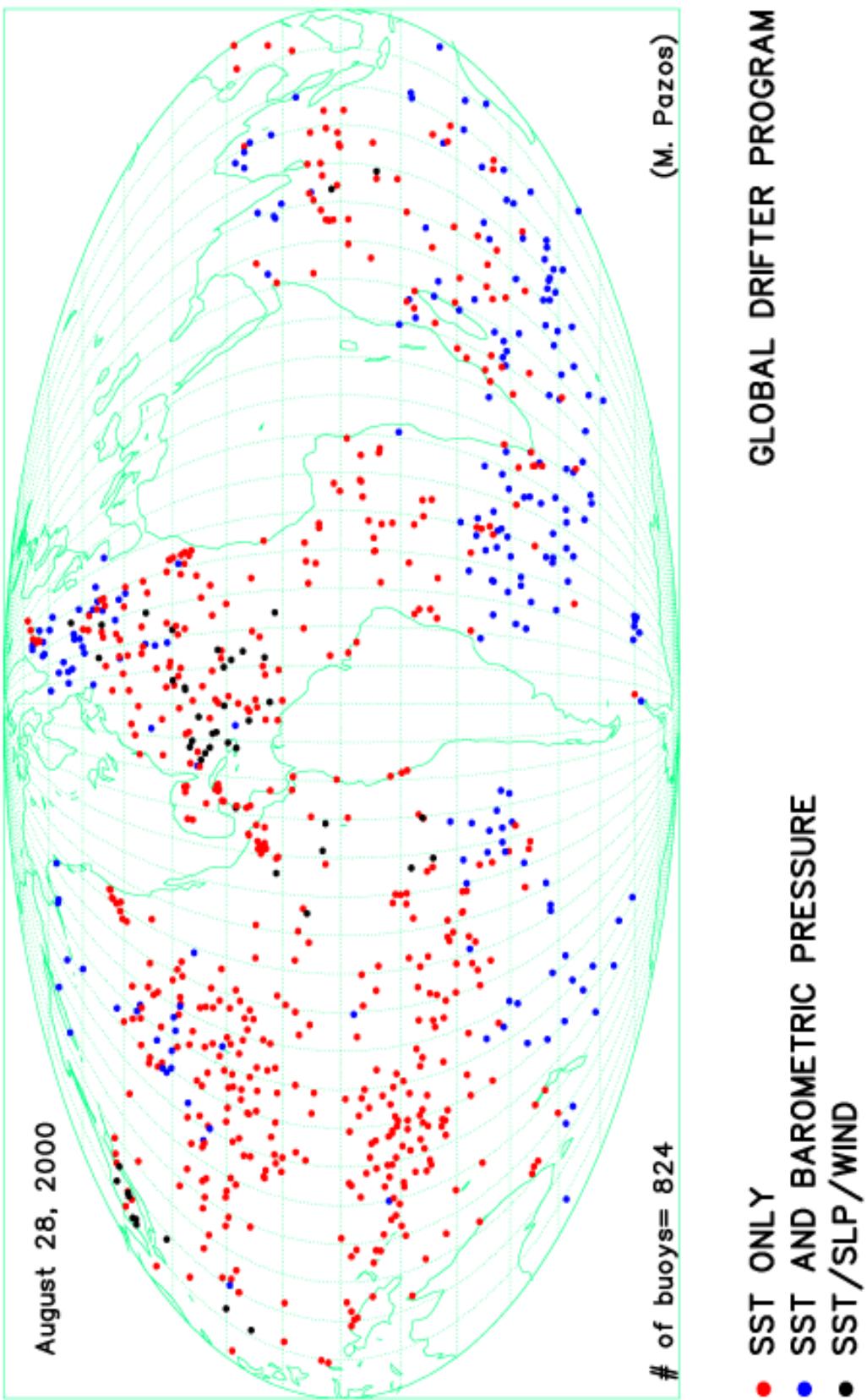
*Status of Global Drifter Arrays (cont'd)*



*Status of Global Drifter Arrays (cont'd)*



*Status of Global Drifter Arrays (cont'd)*



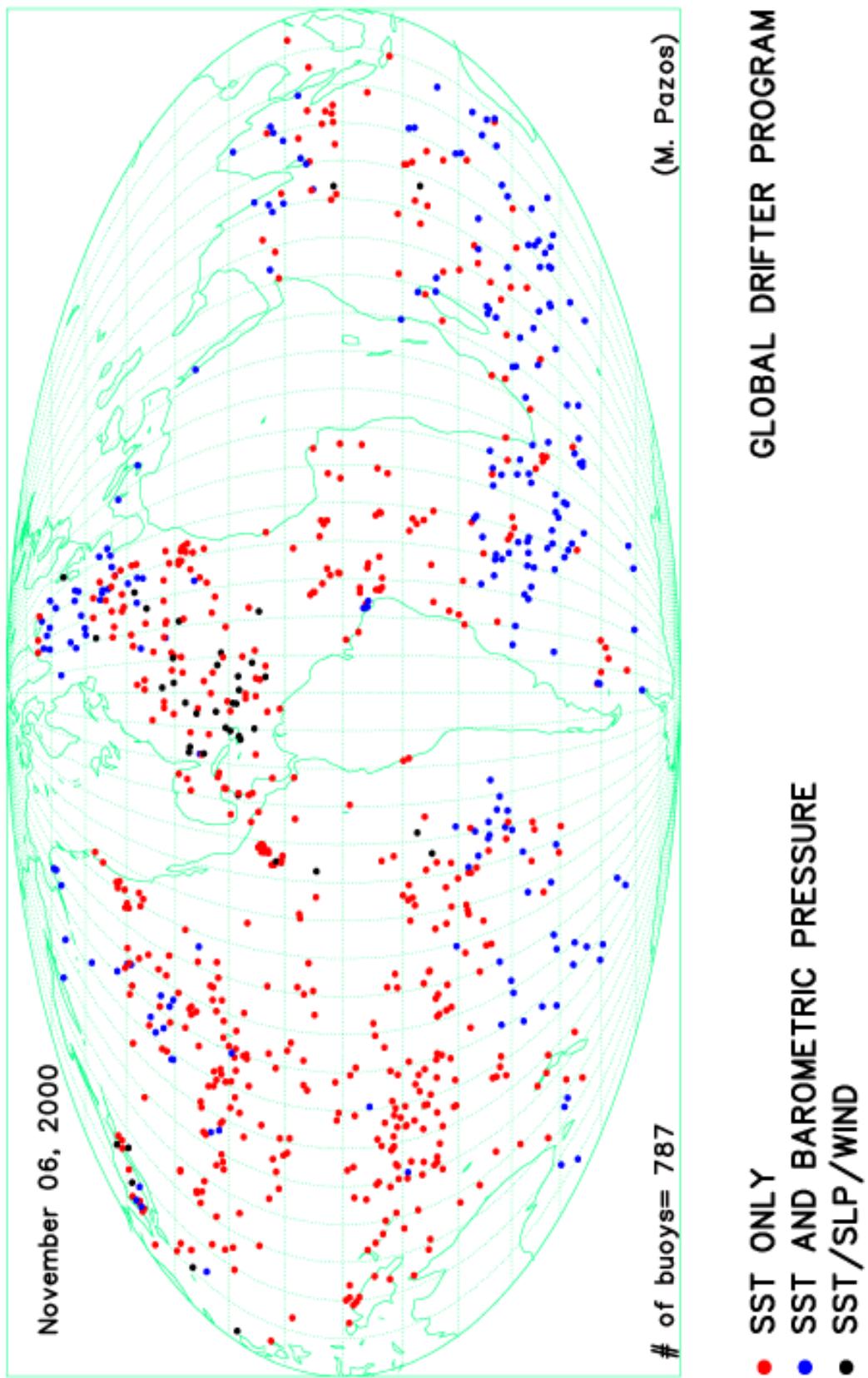
*Status of Global Drifter Arrays (cont'd)*

October 02, 2000

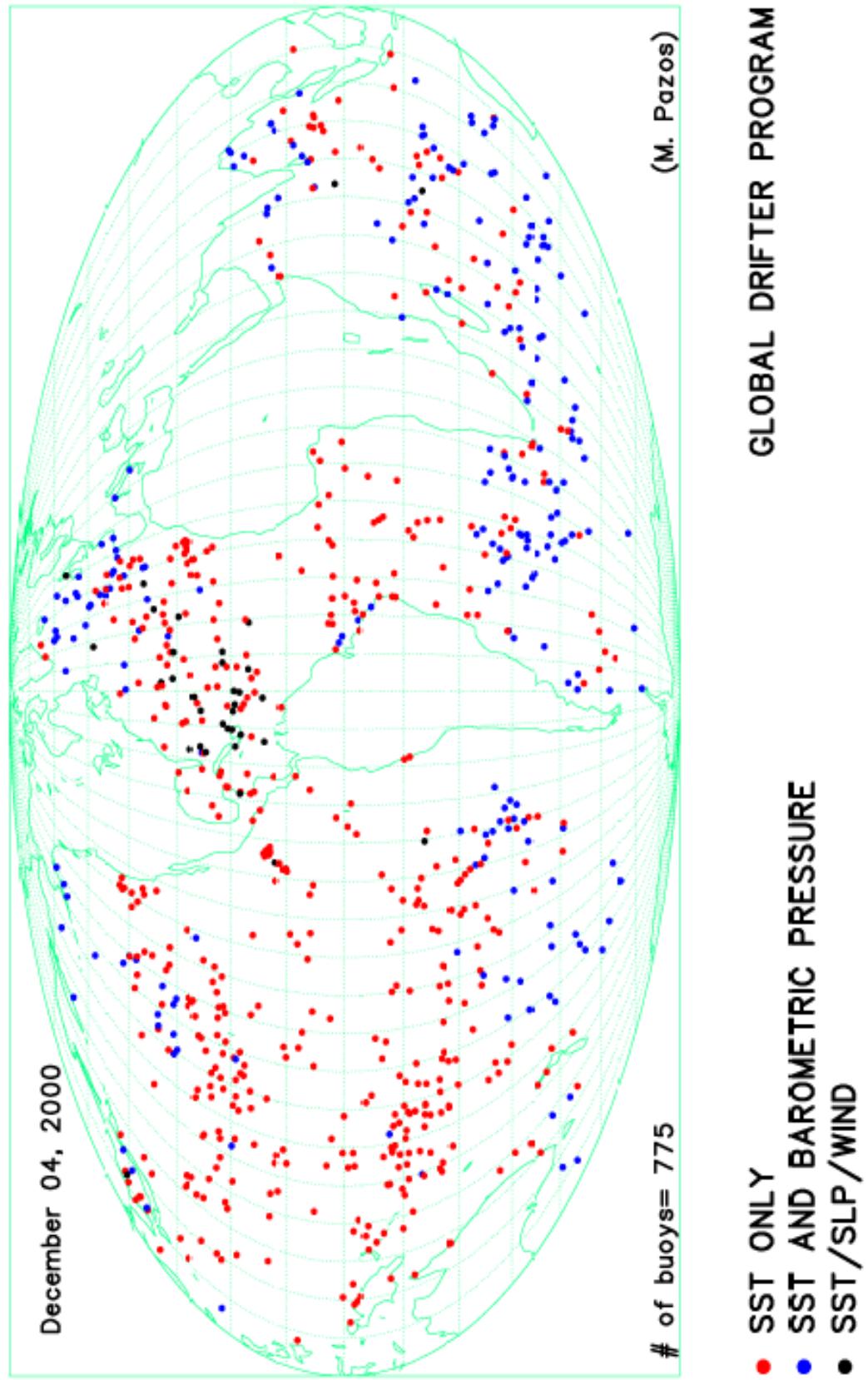
# of buoys= 813  
(M. Pazos)

- GLOBAL DRIFTER PROGRAM
- SST ONLY
  - SST AND BAROMETRIC PRESSURE
  - SST/SLP/WIND

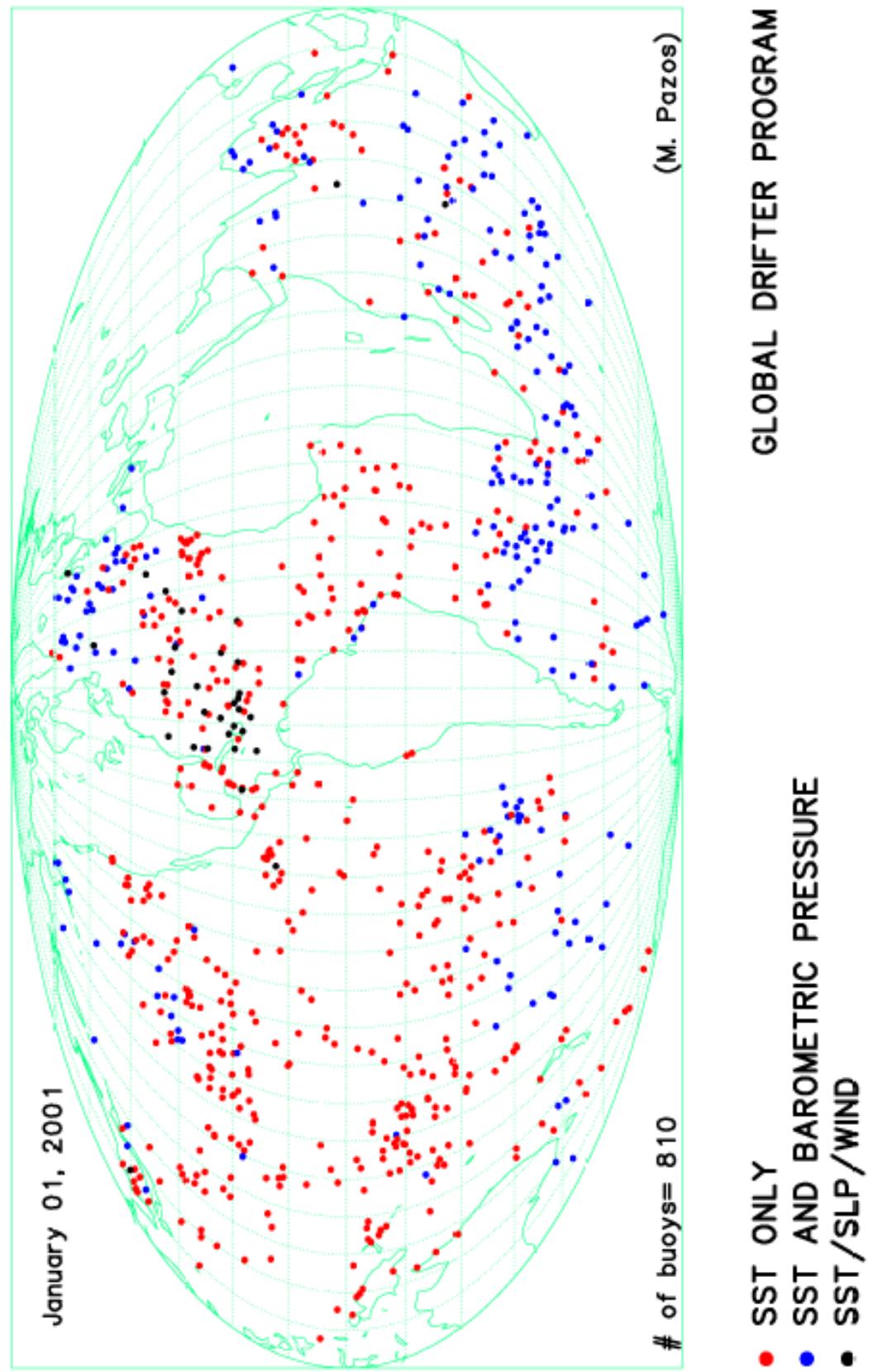
*Status of Global Drifter Arrays (cont'd)*



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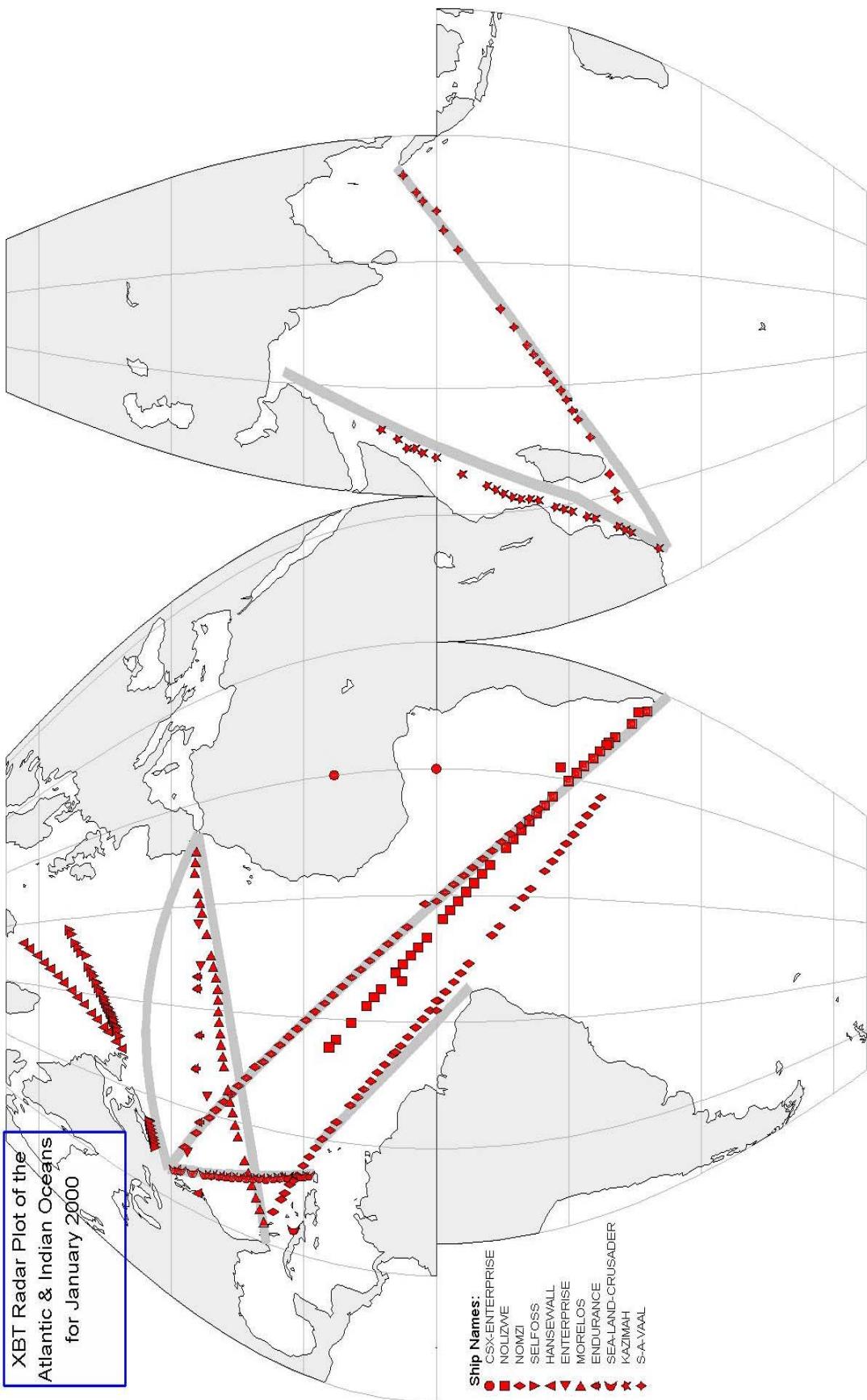


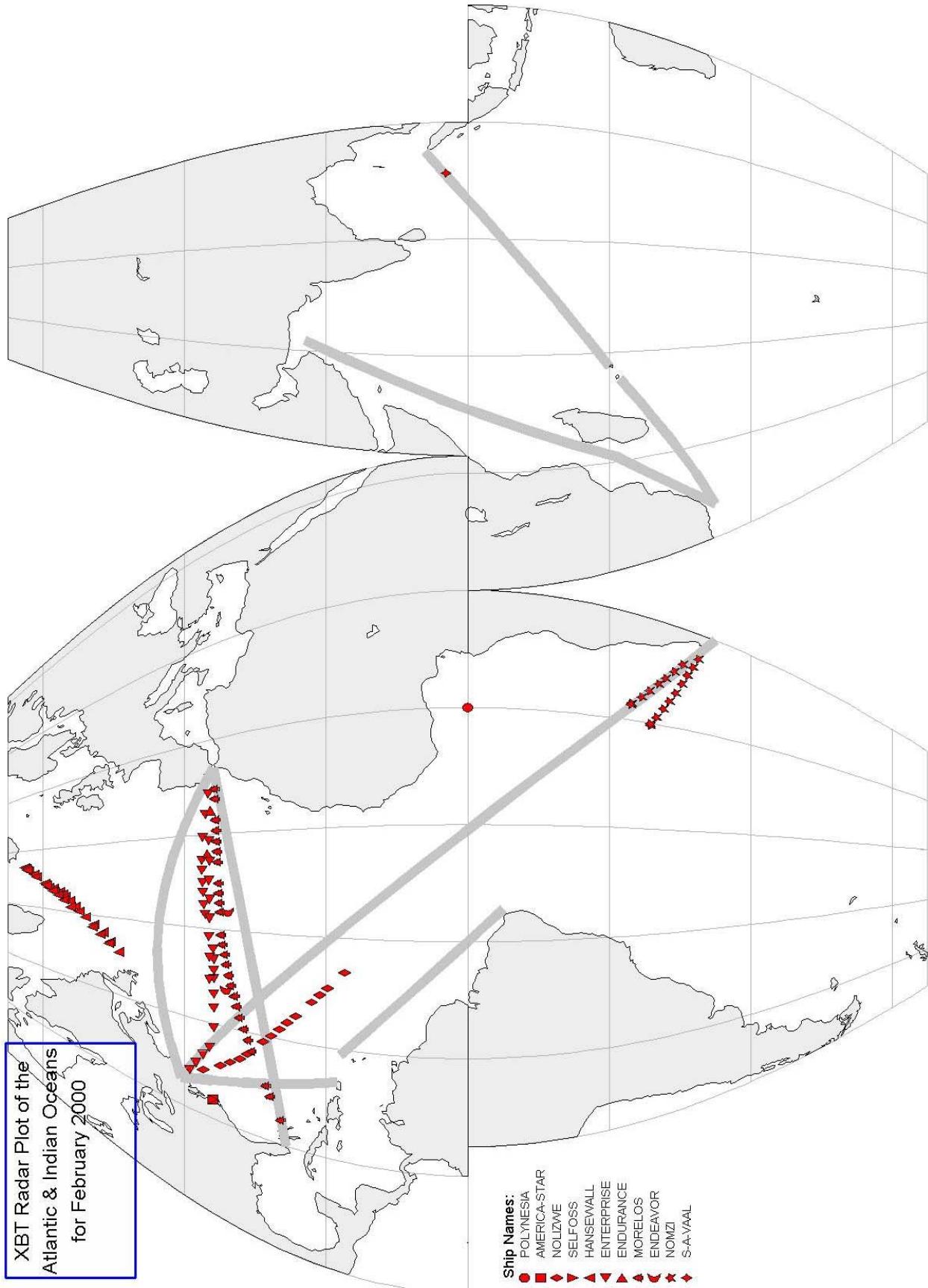
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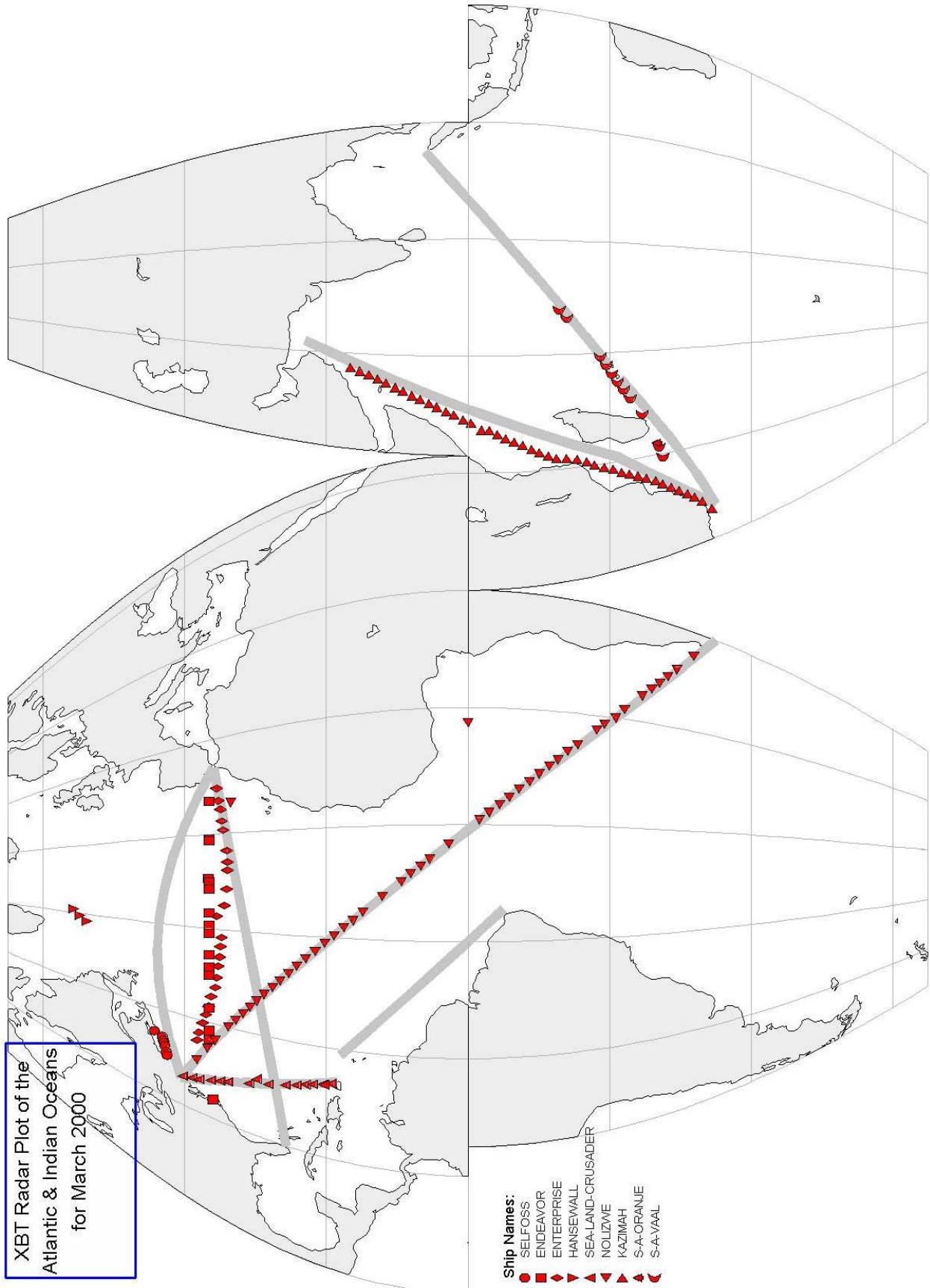


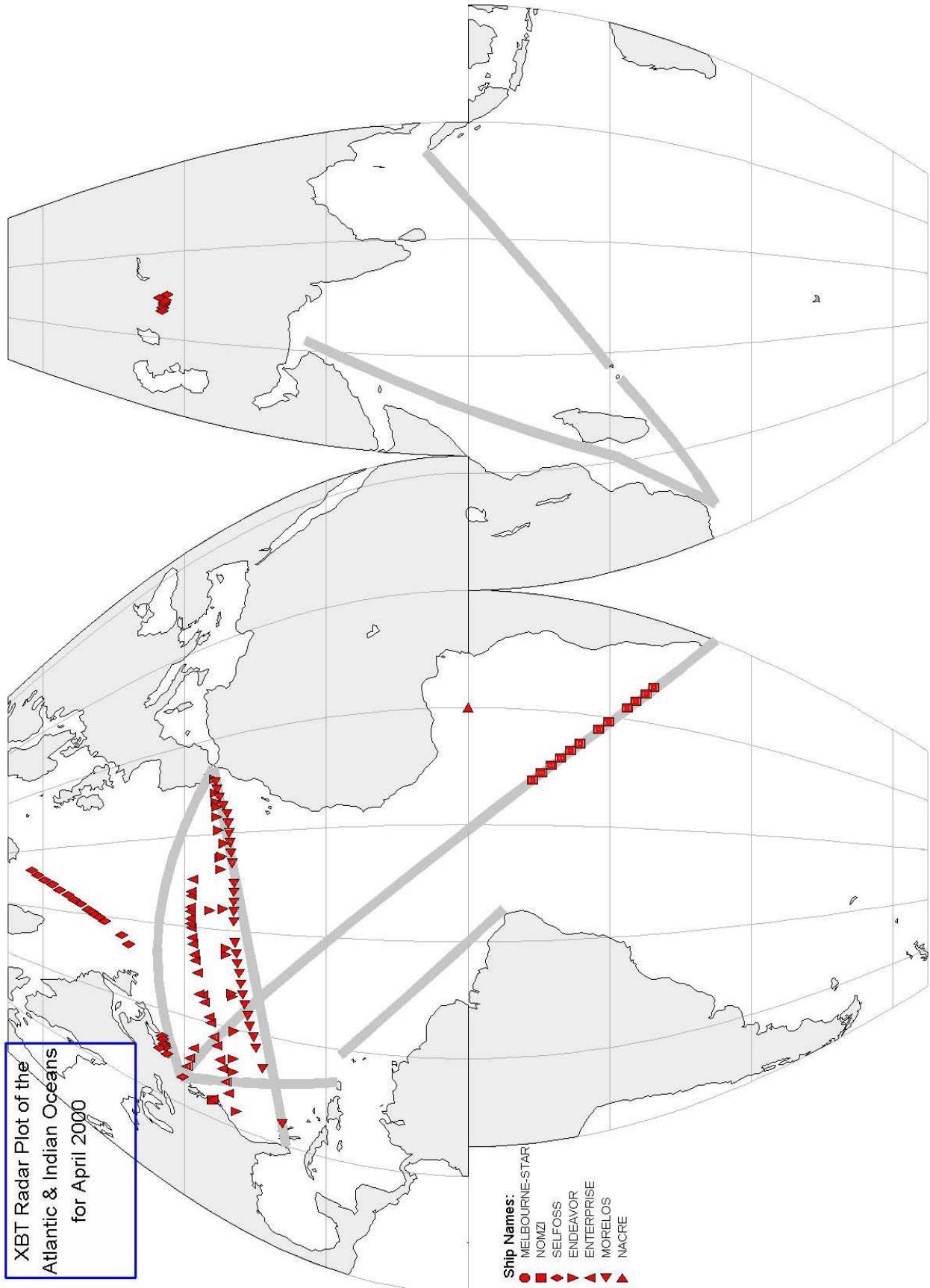
## *Monthly Radar plots of the XBT network (January through December 2000)*

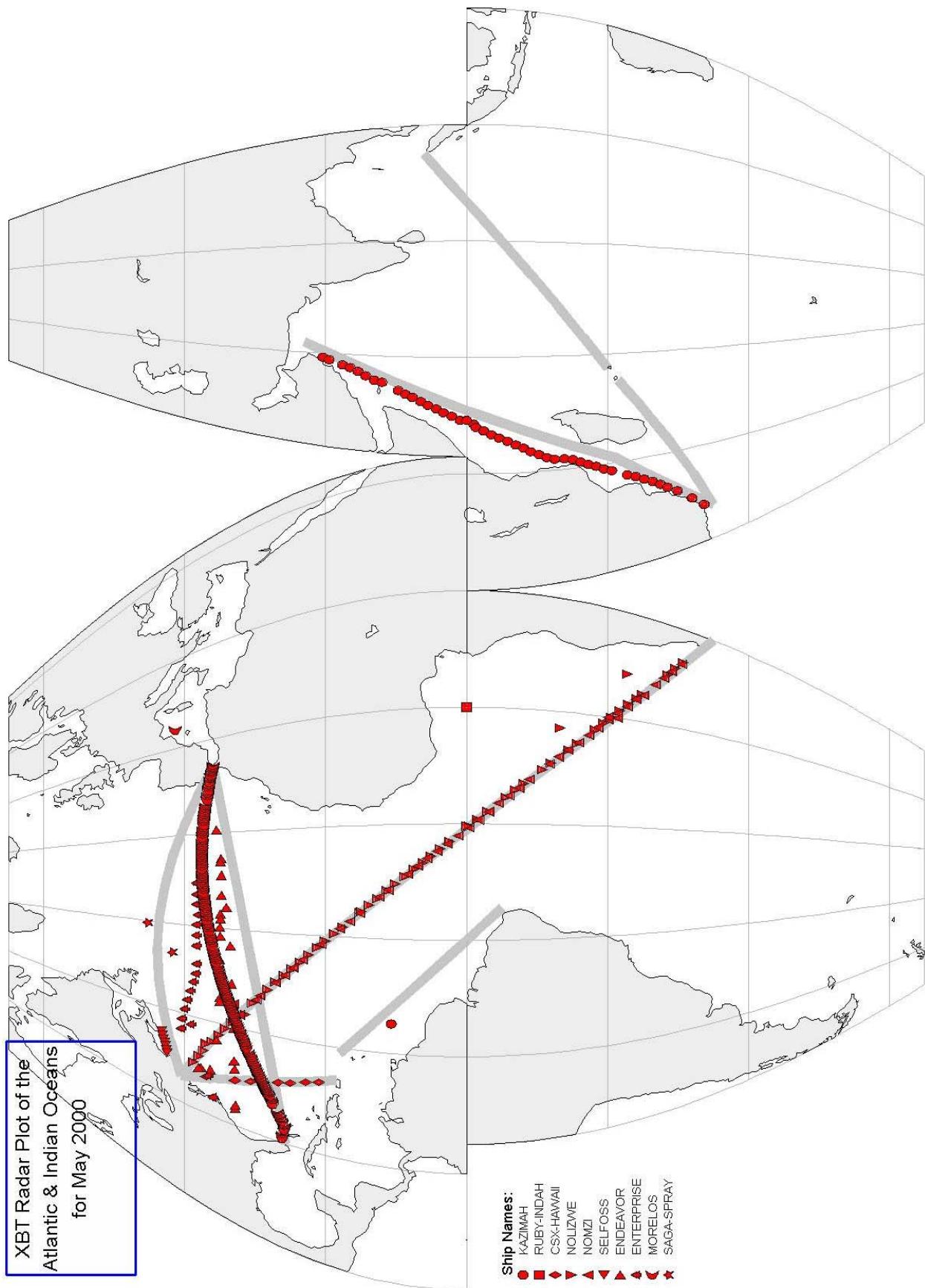
XBT Radar Plot of the  
Atlantic & Indian Oceans  
for January 2000

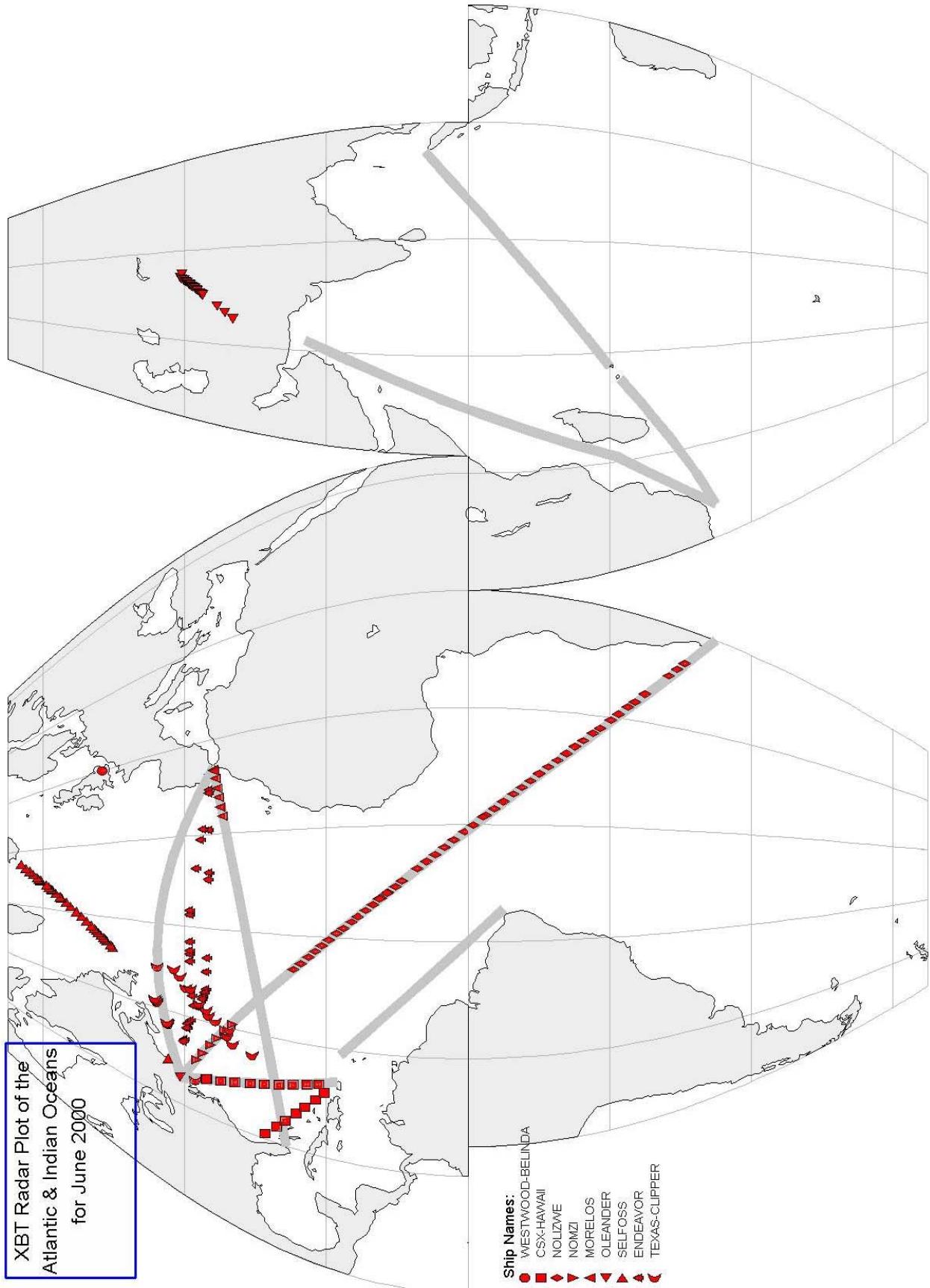


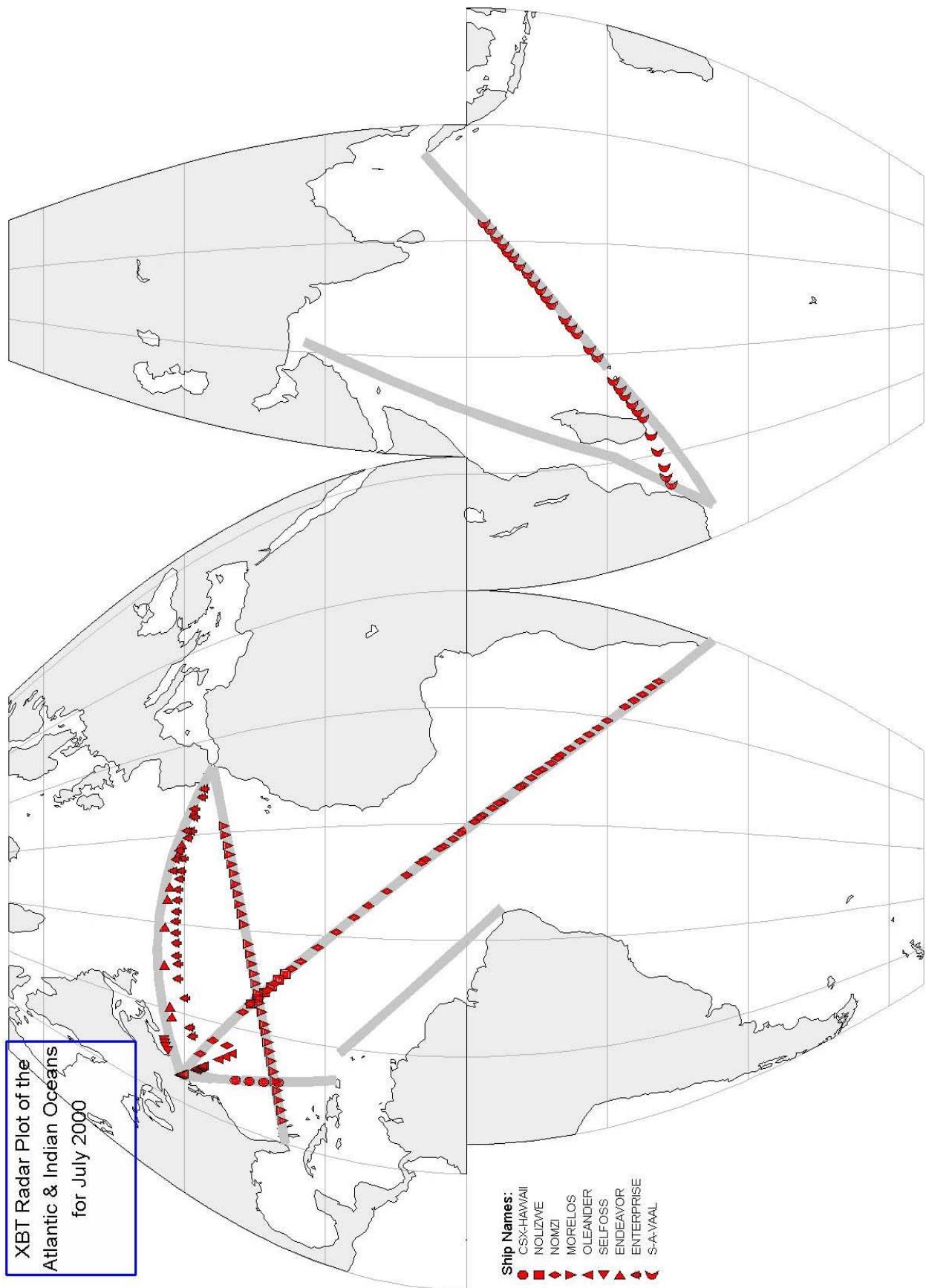


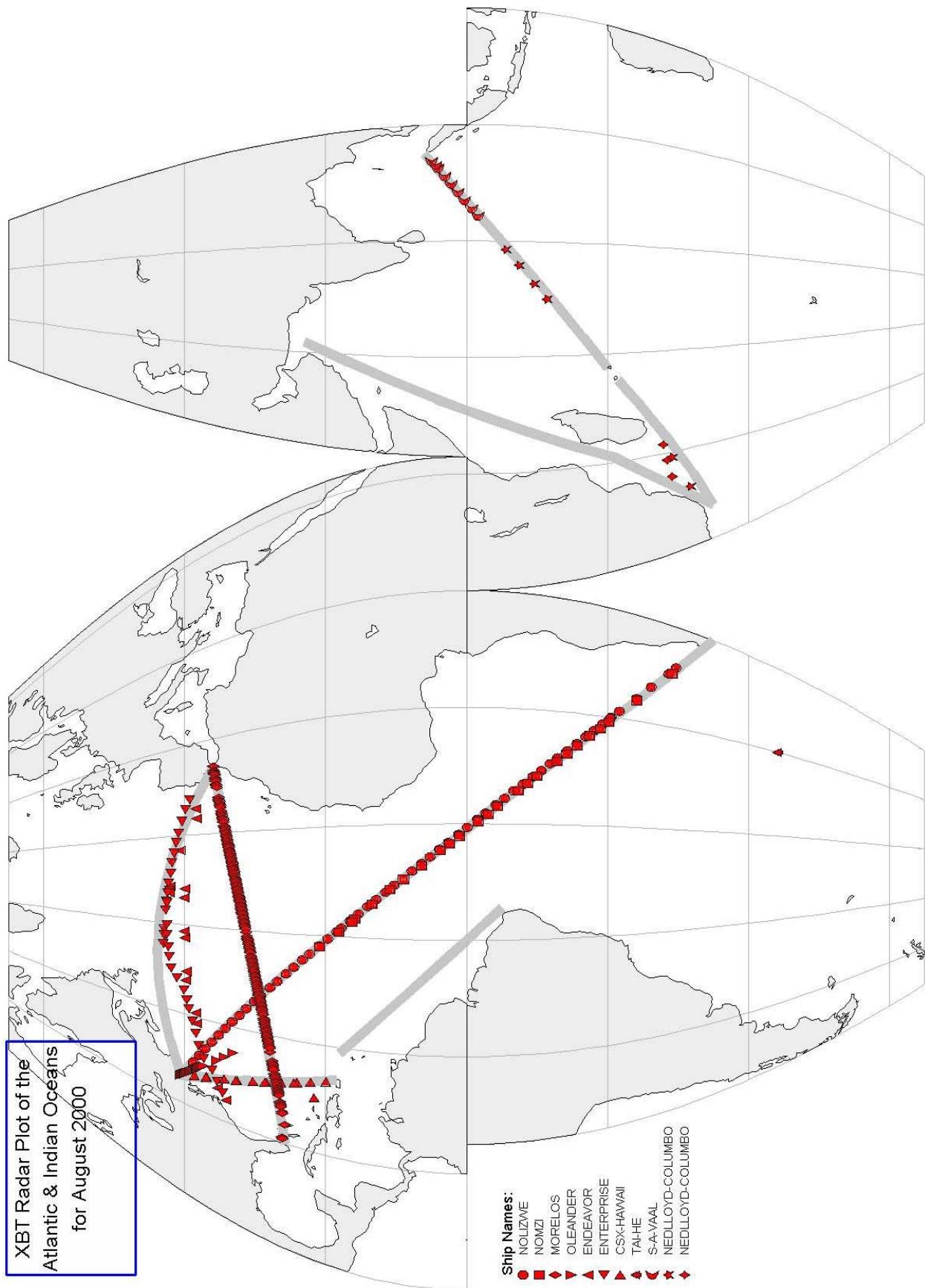


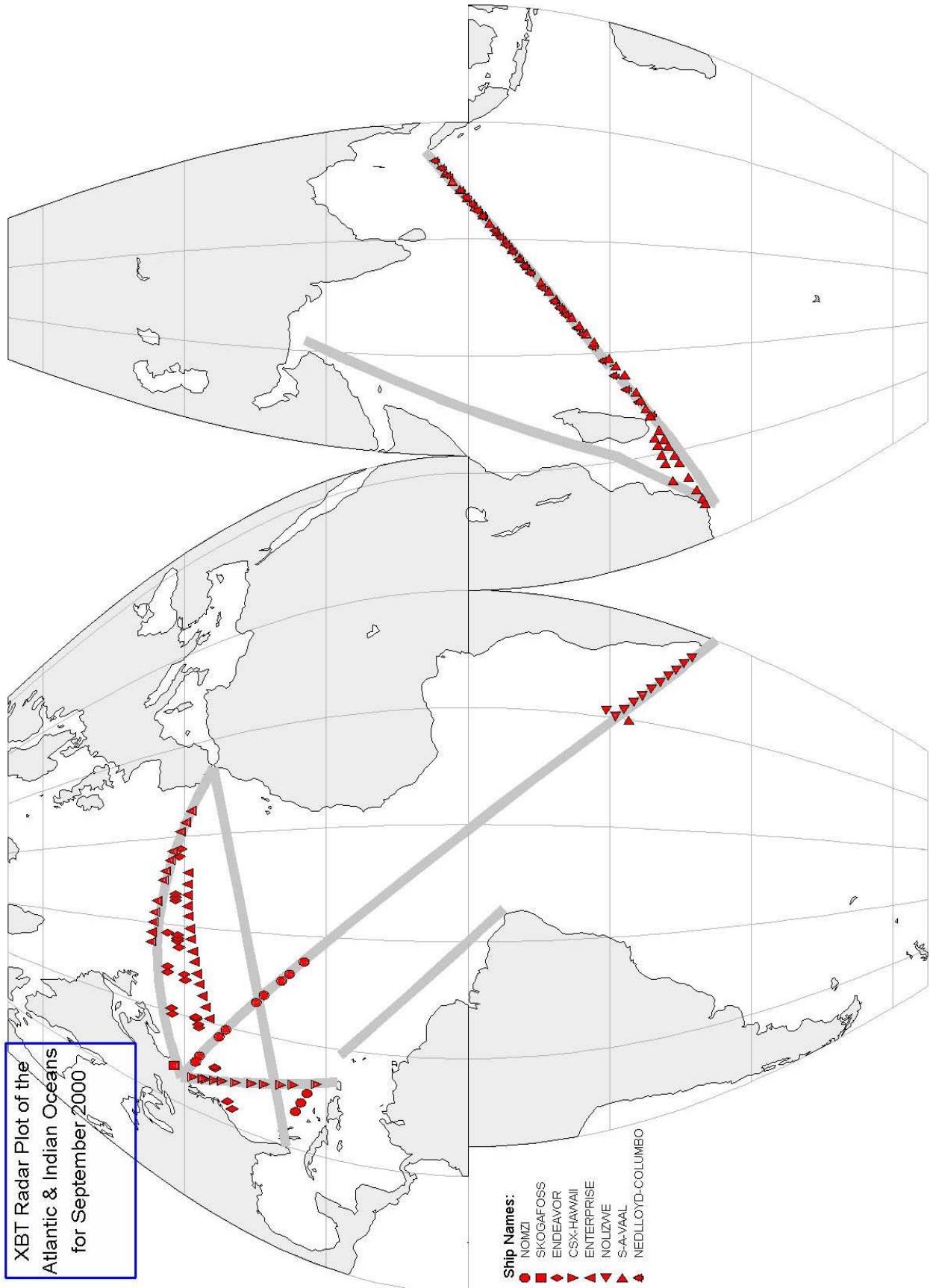


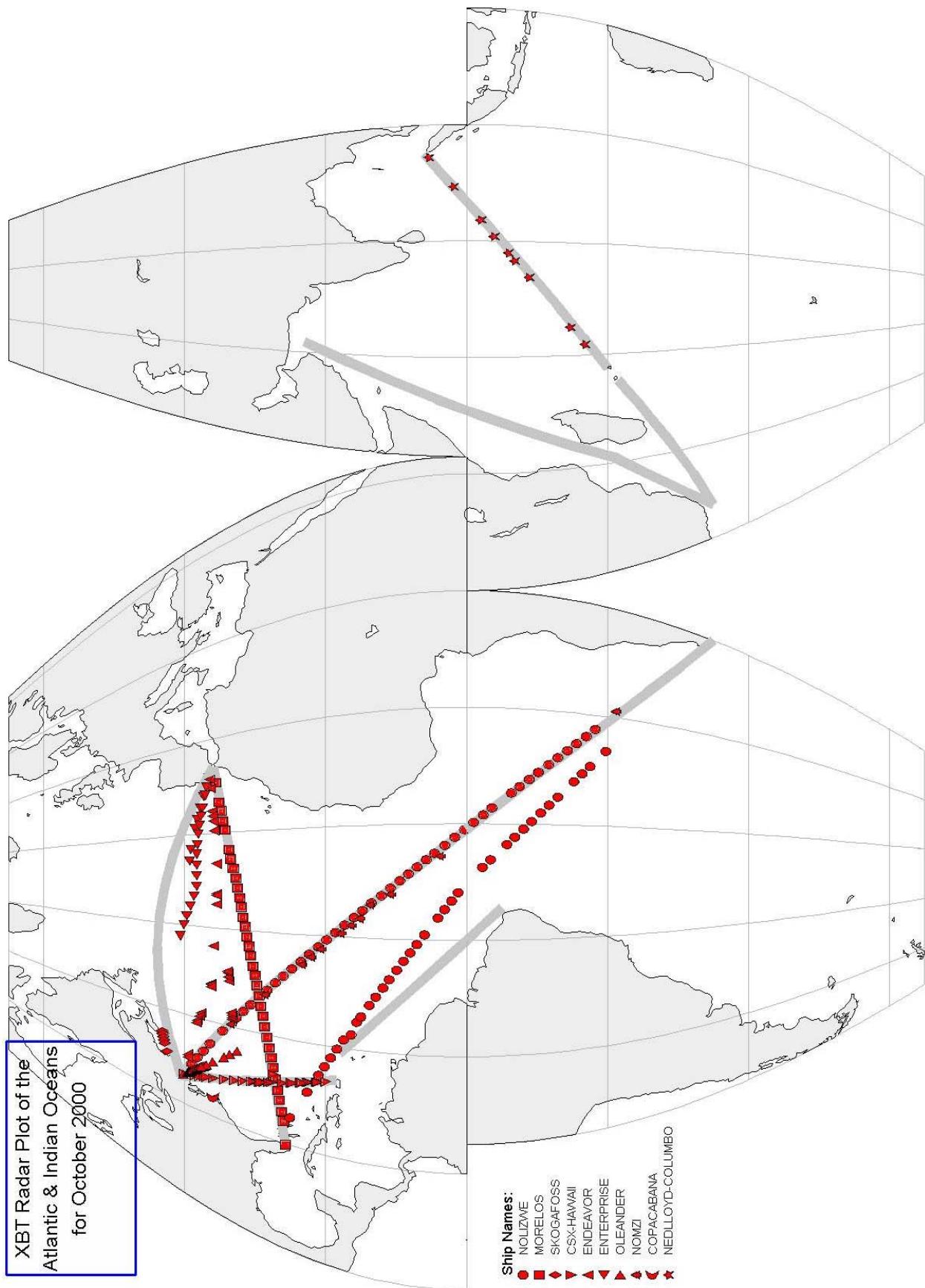


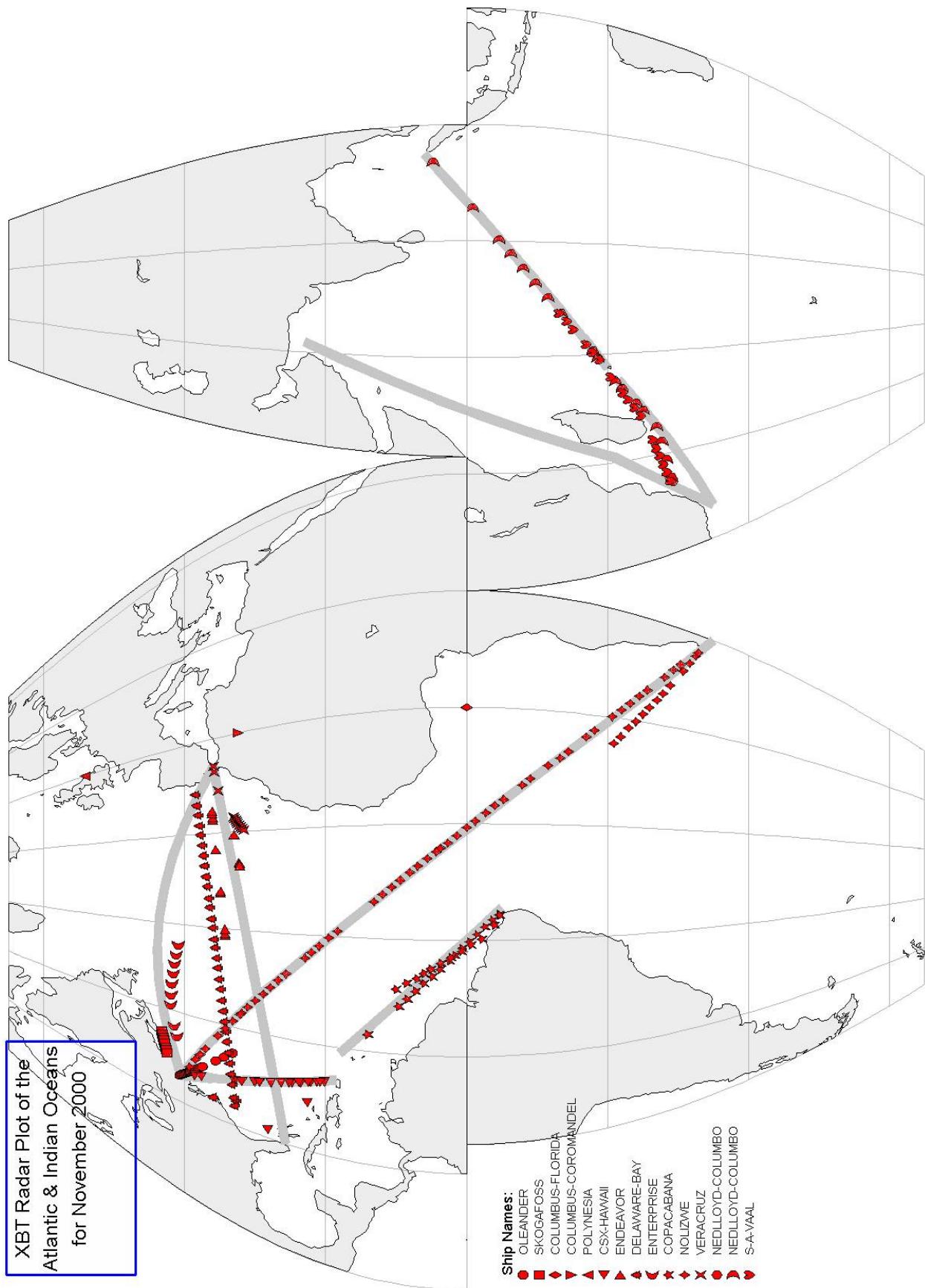


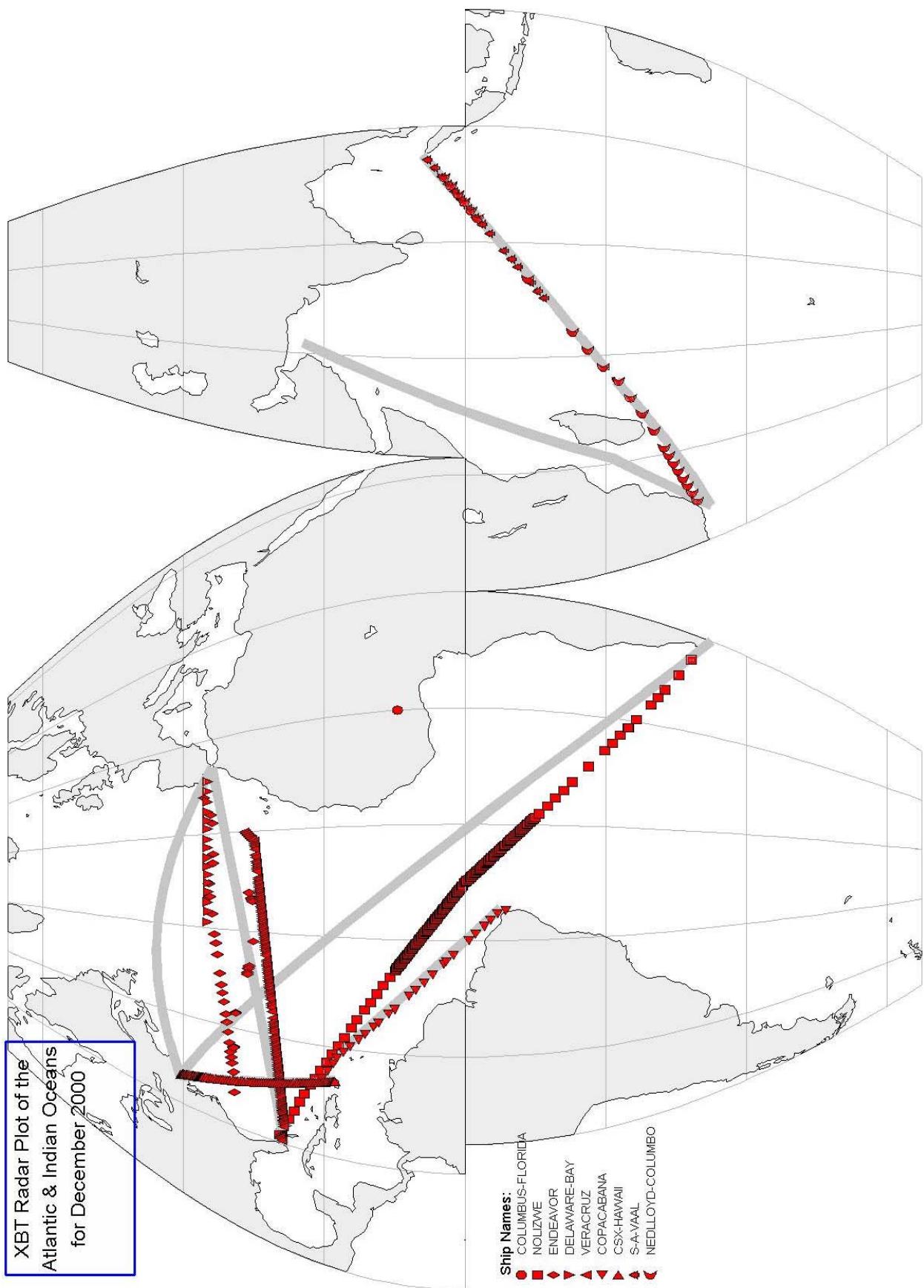


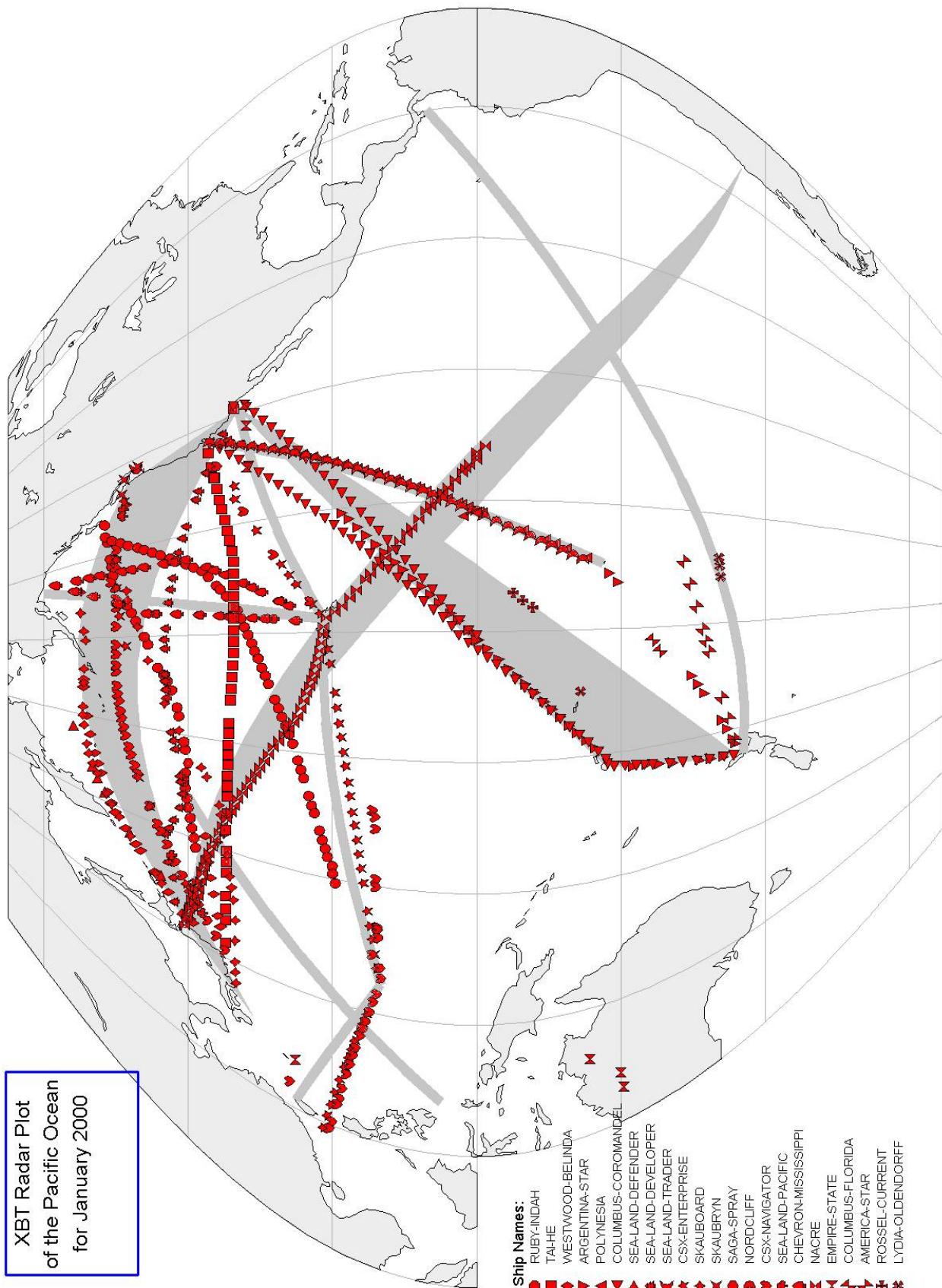


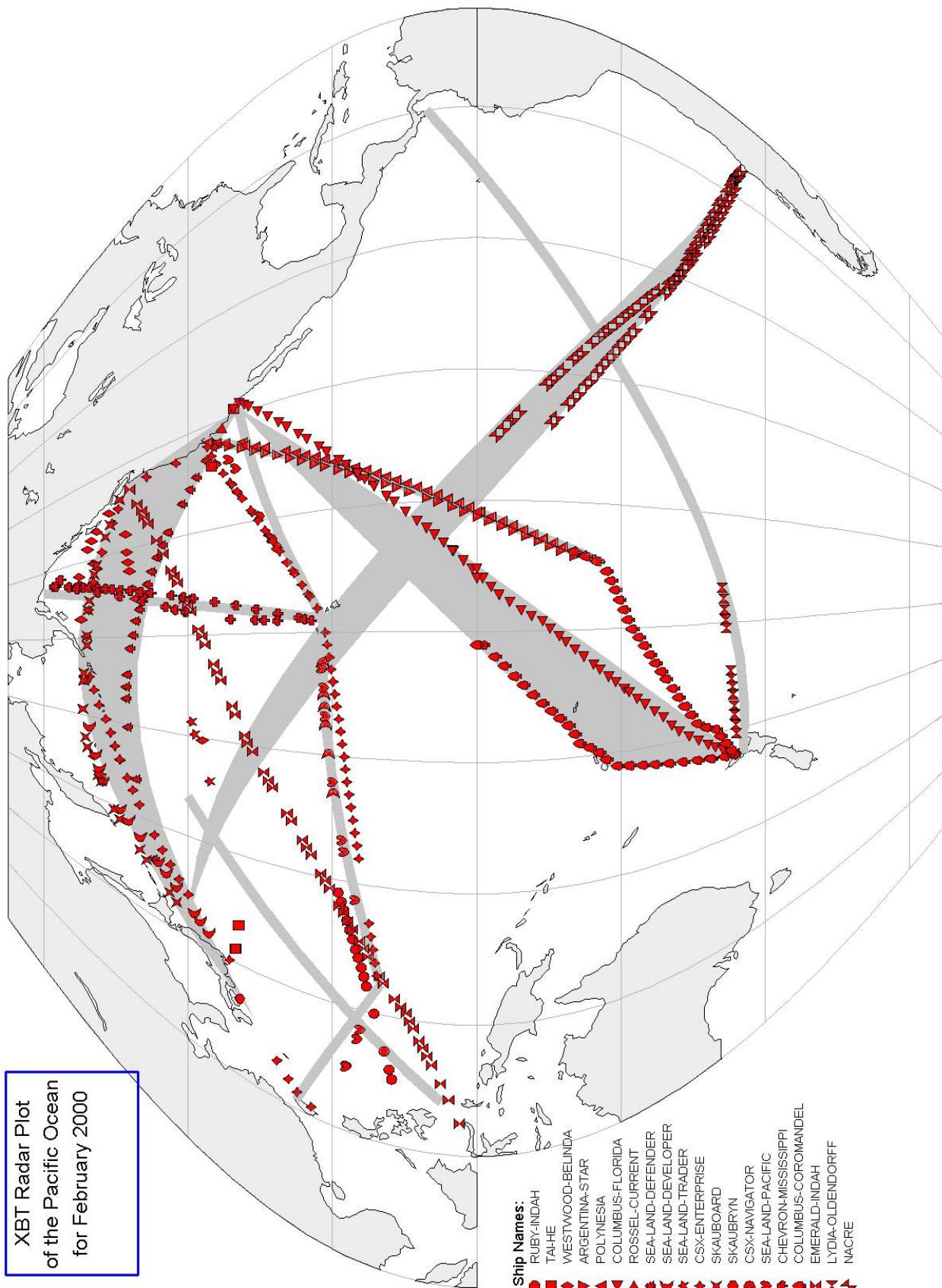


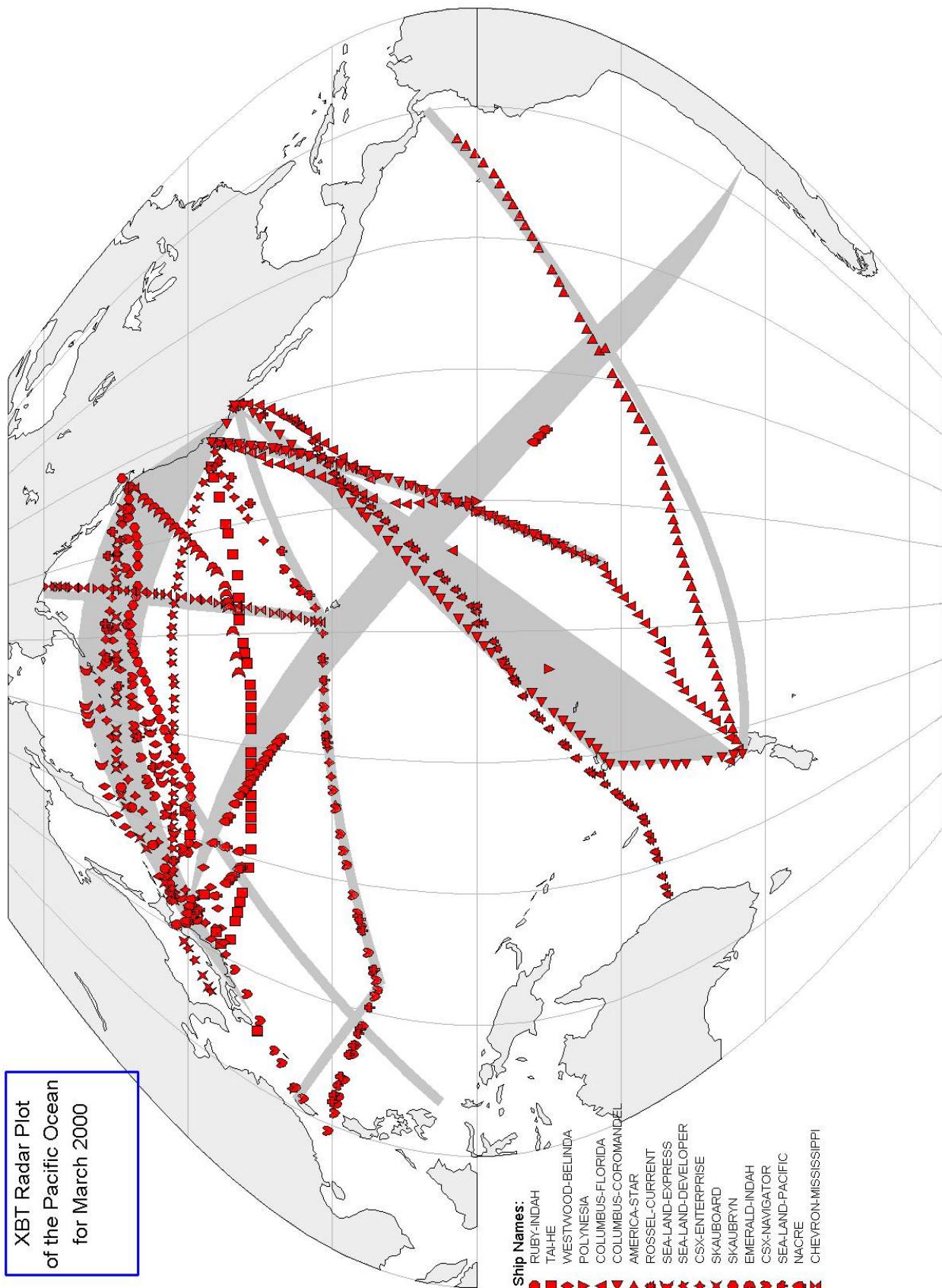


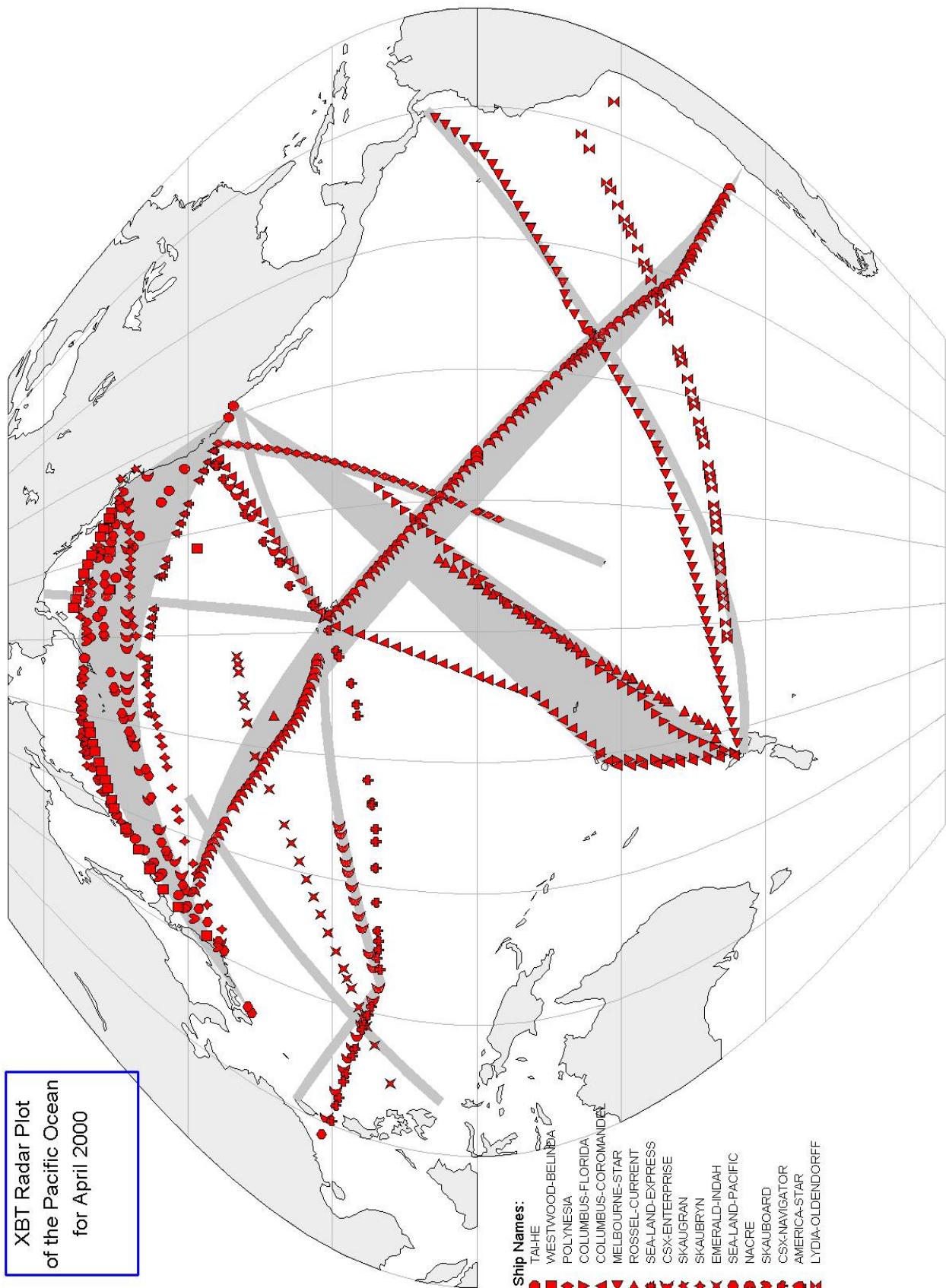


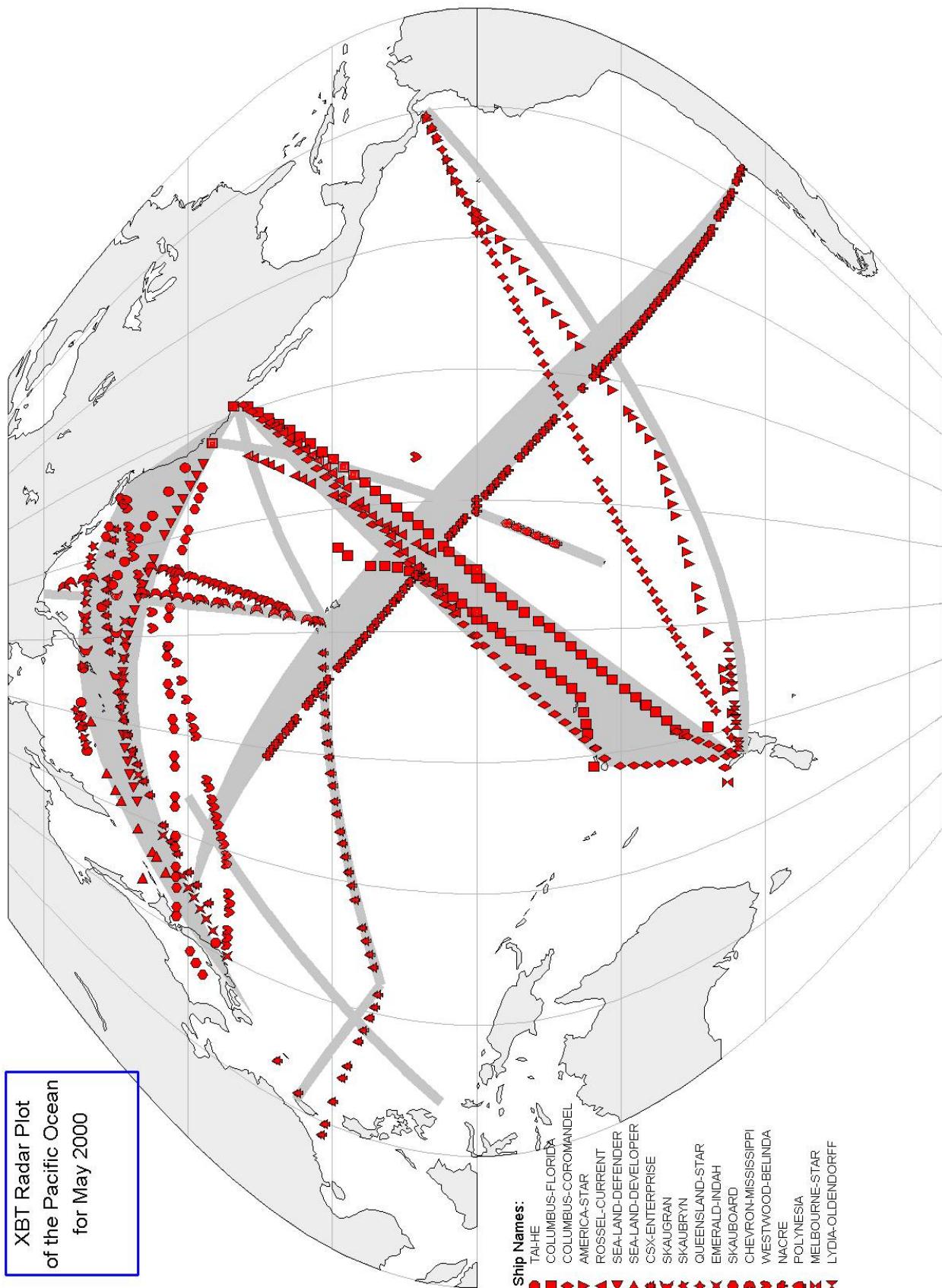


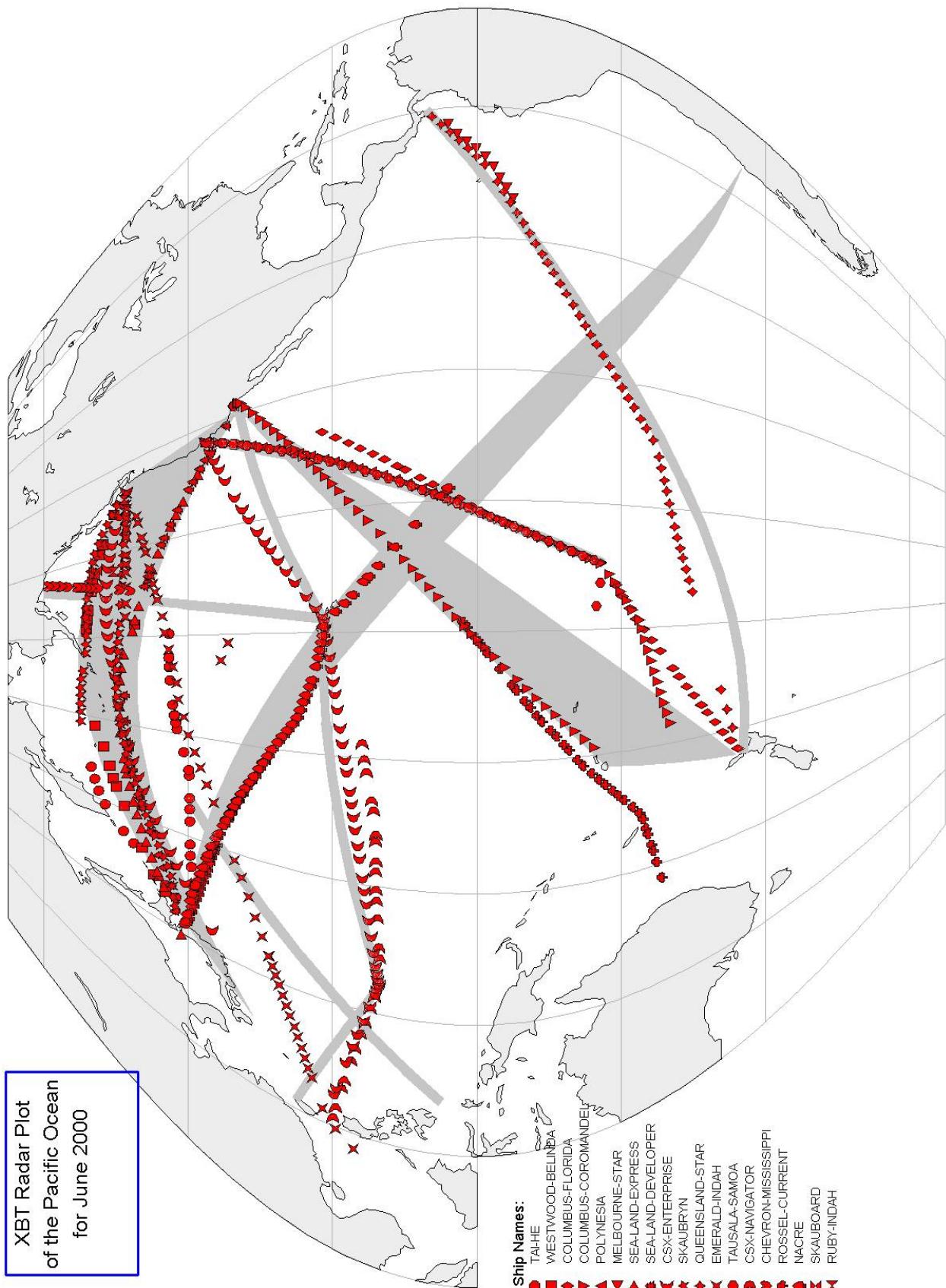


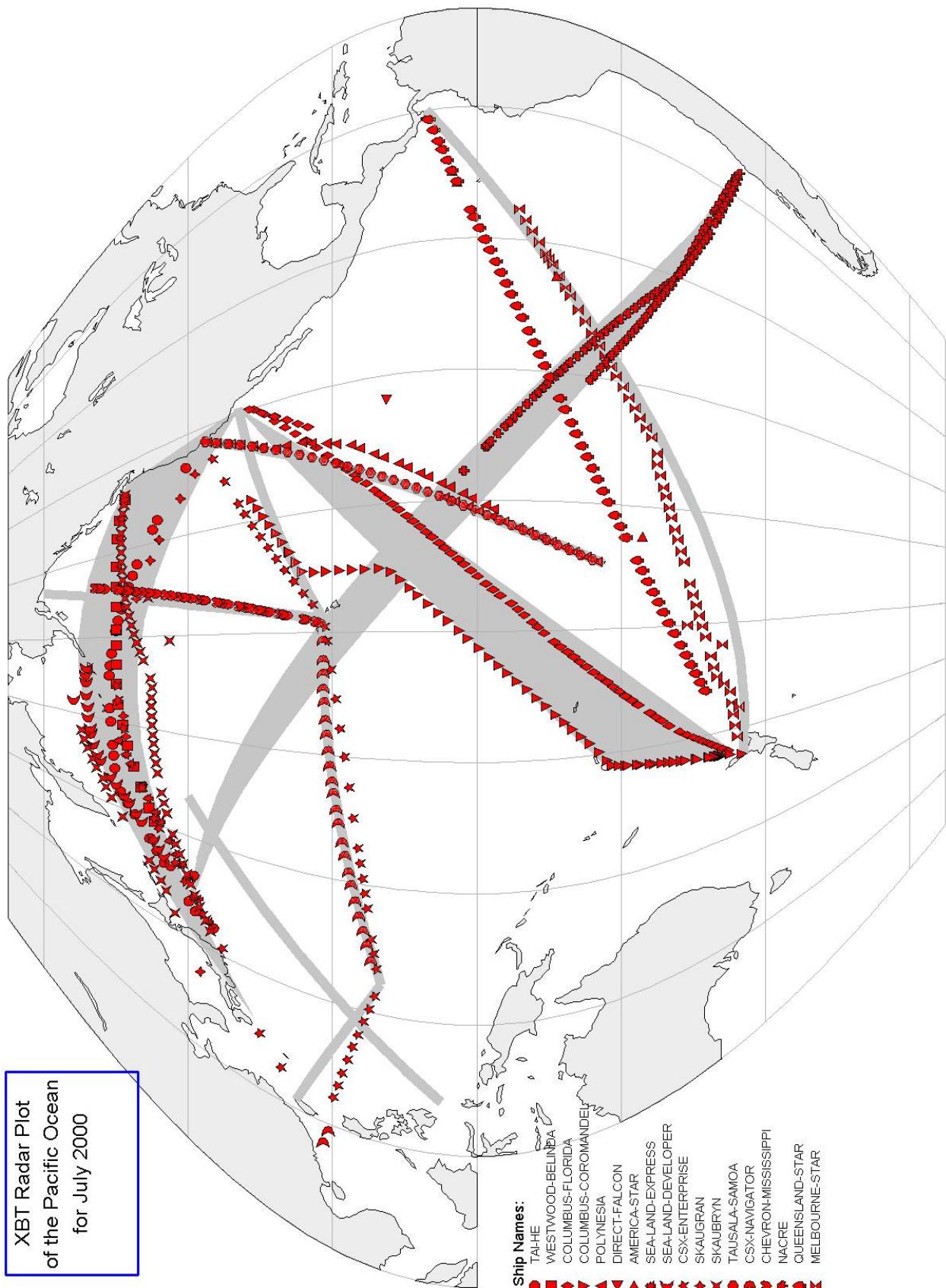


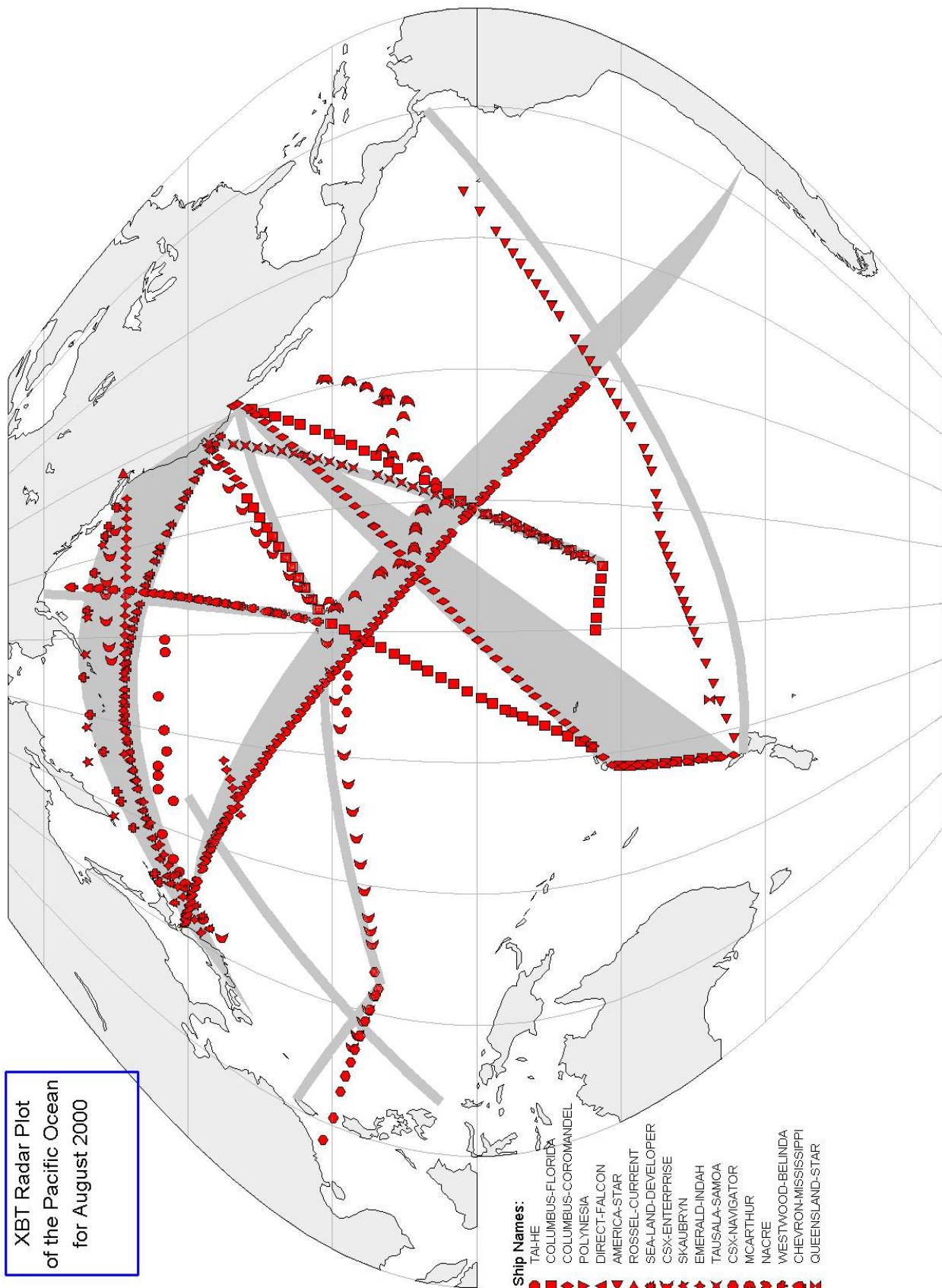


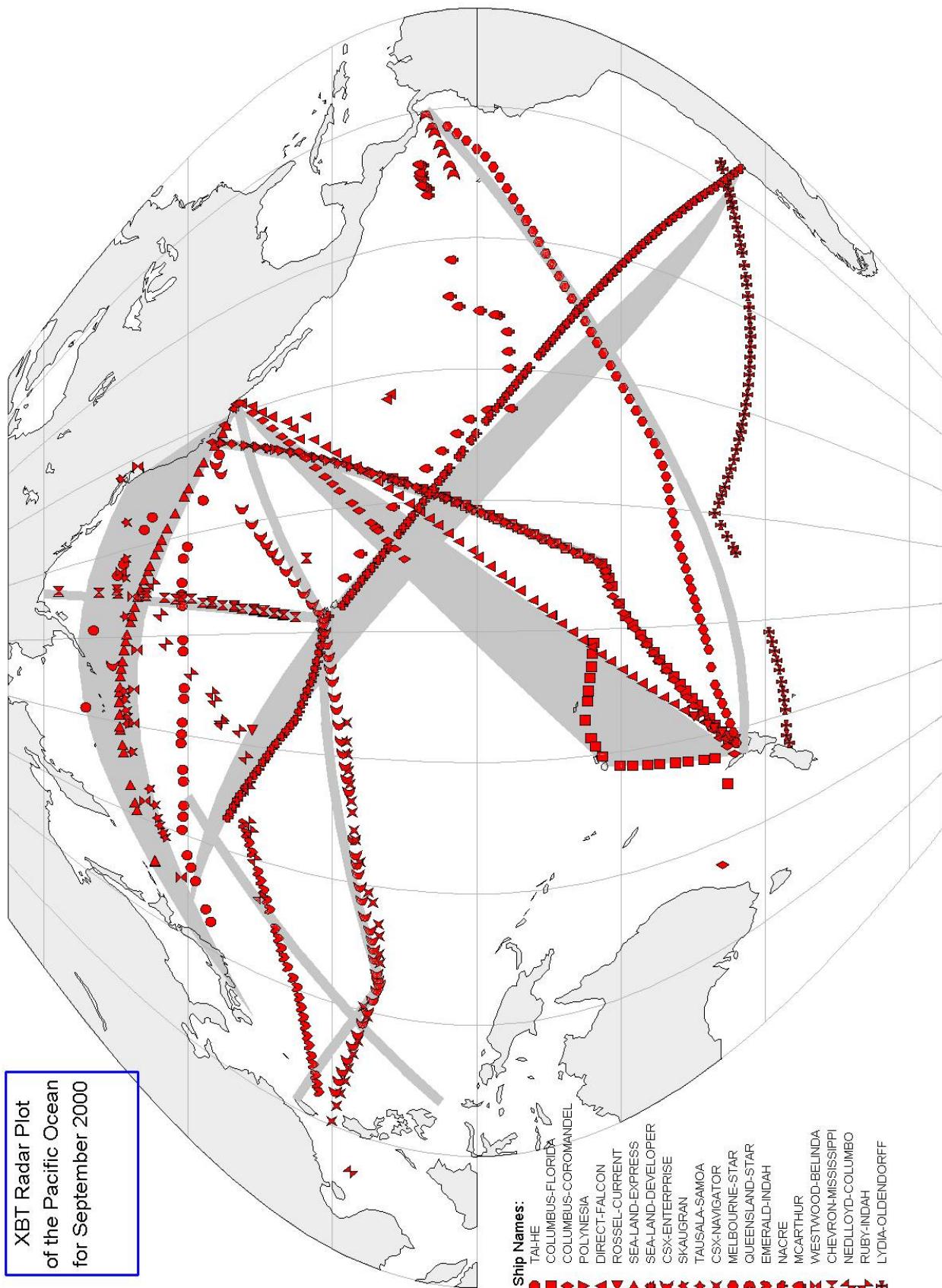


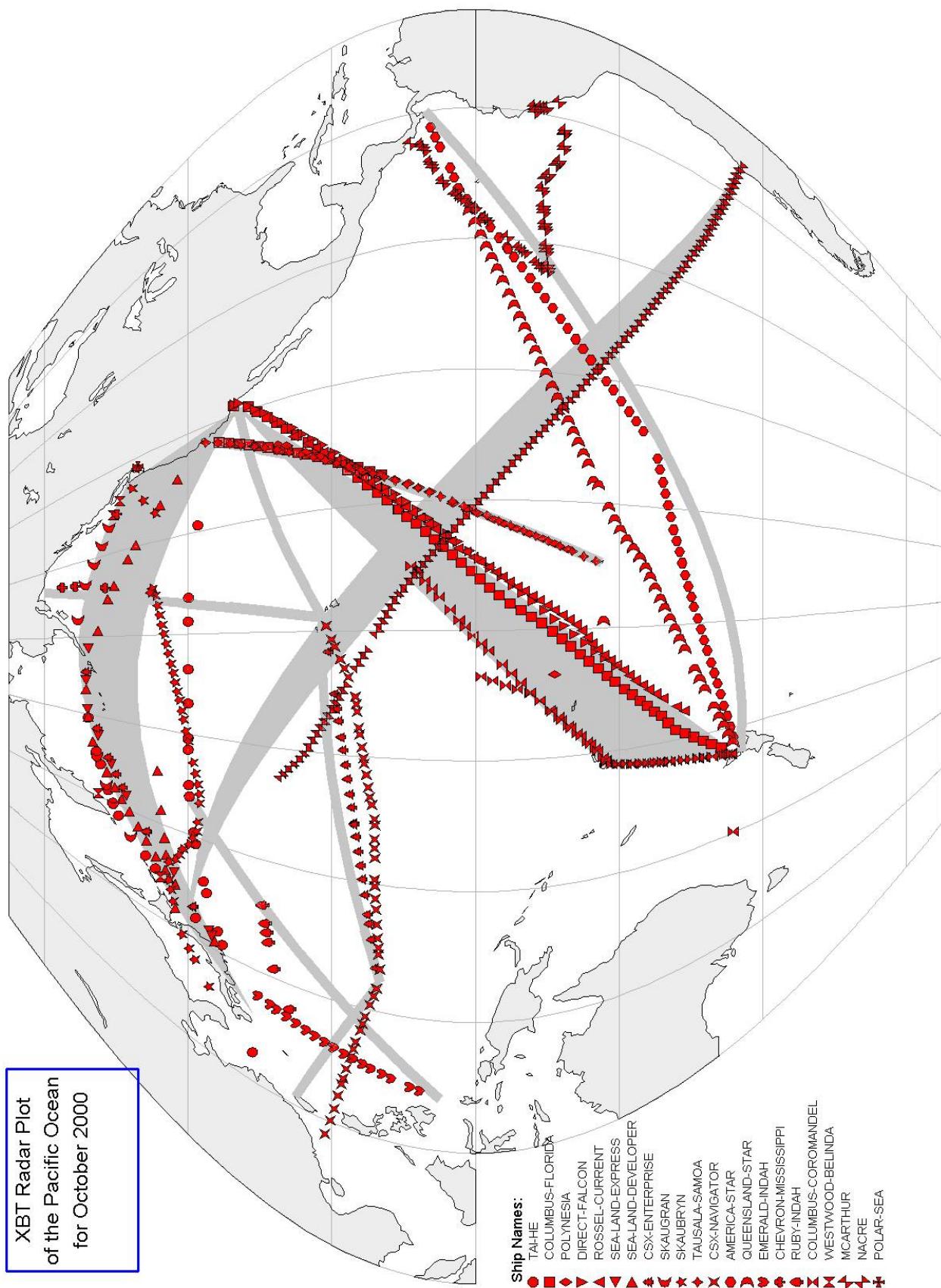


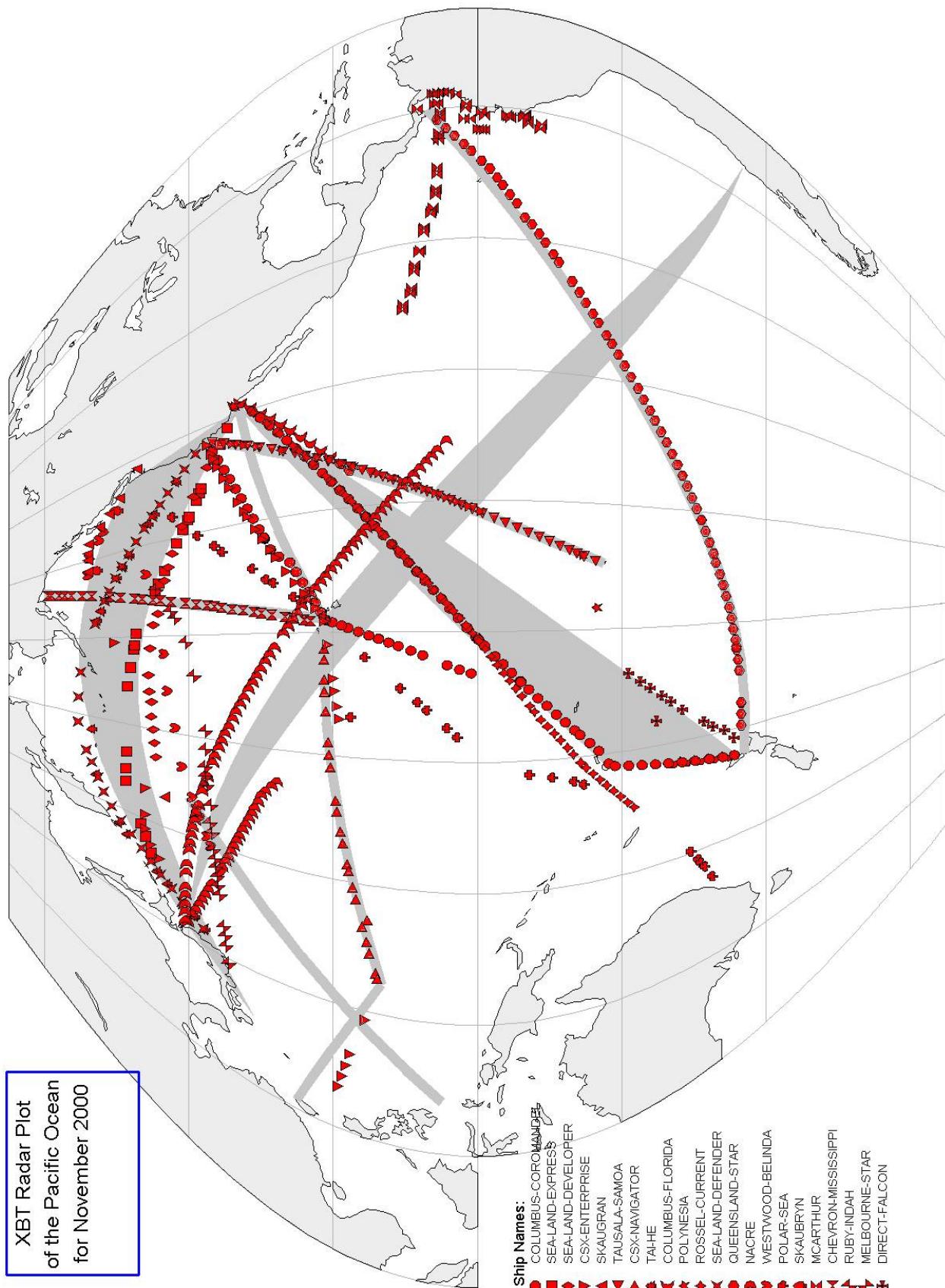


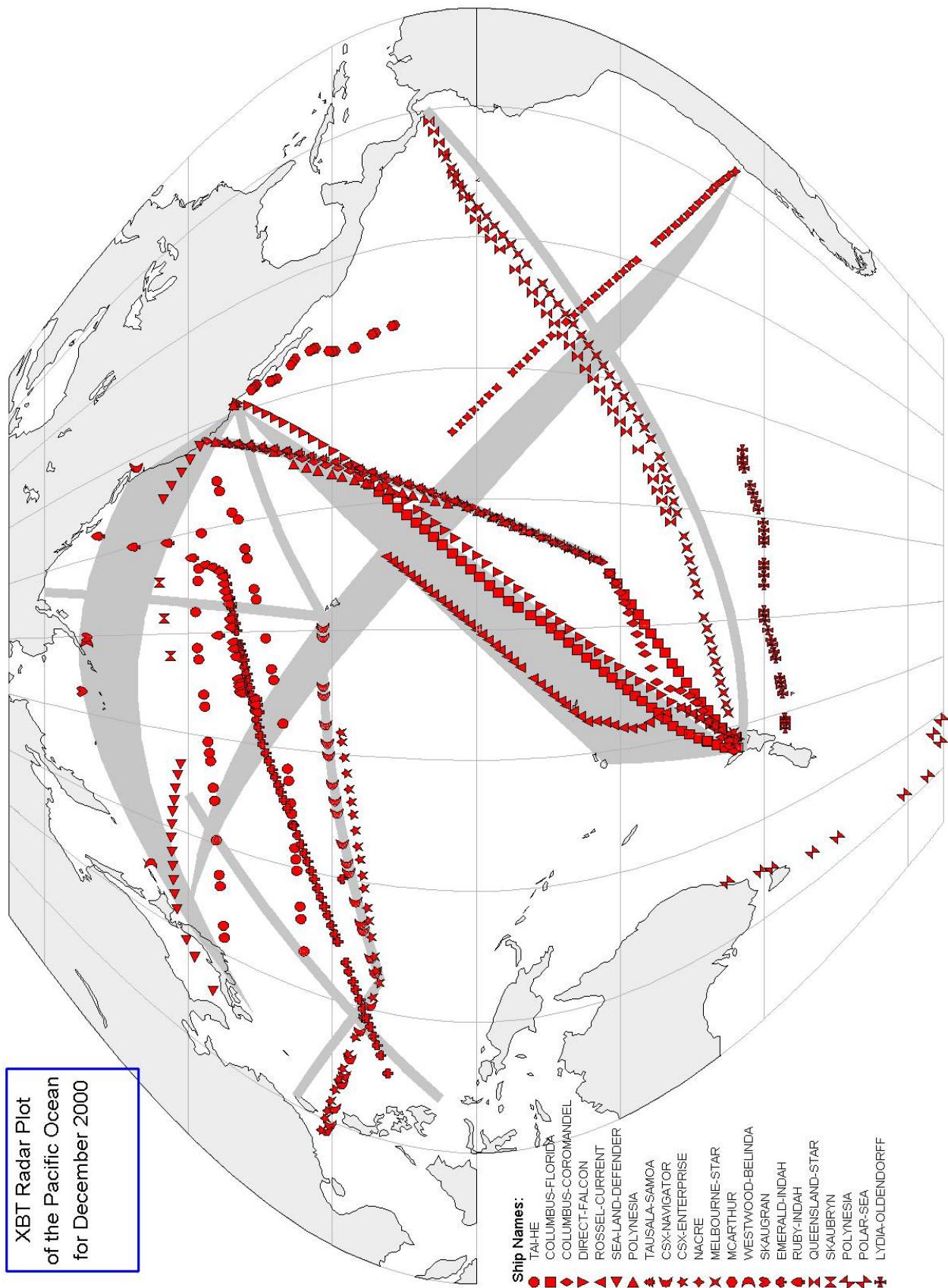








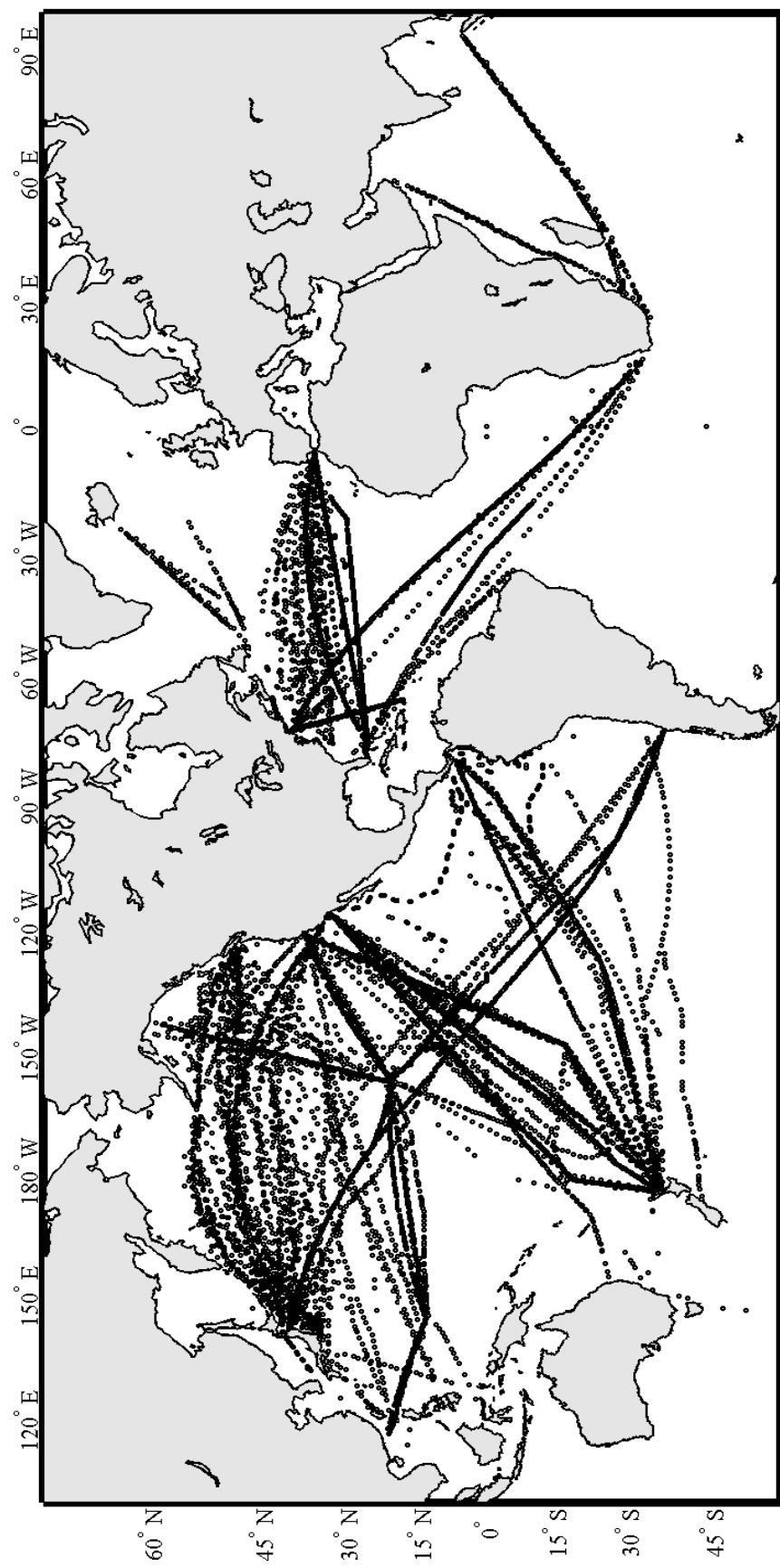




## *Data Collection*

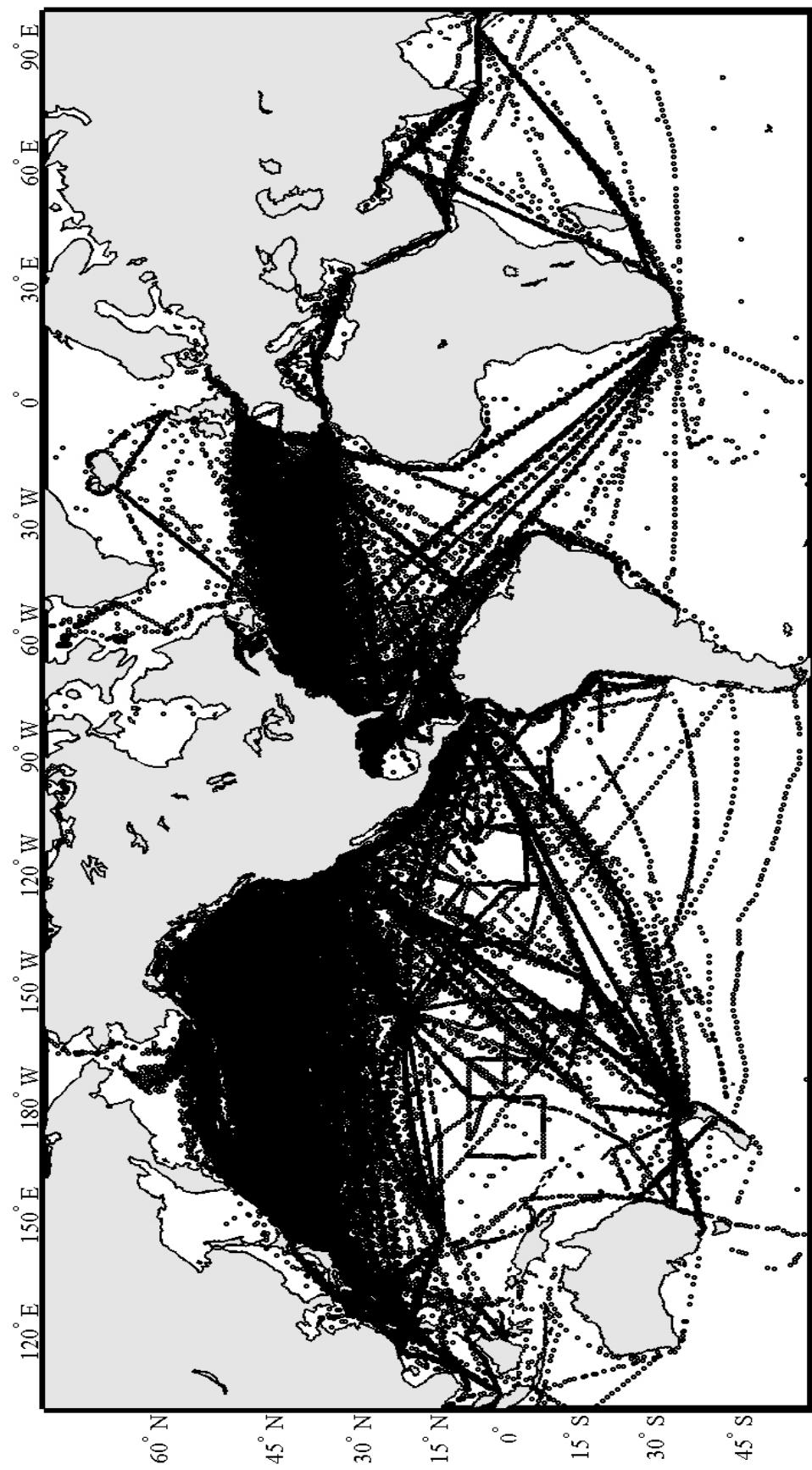
“Dot” plot of all XBT observations collected via SEAS during the year 2000

Total number of XBT observations = 11,569

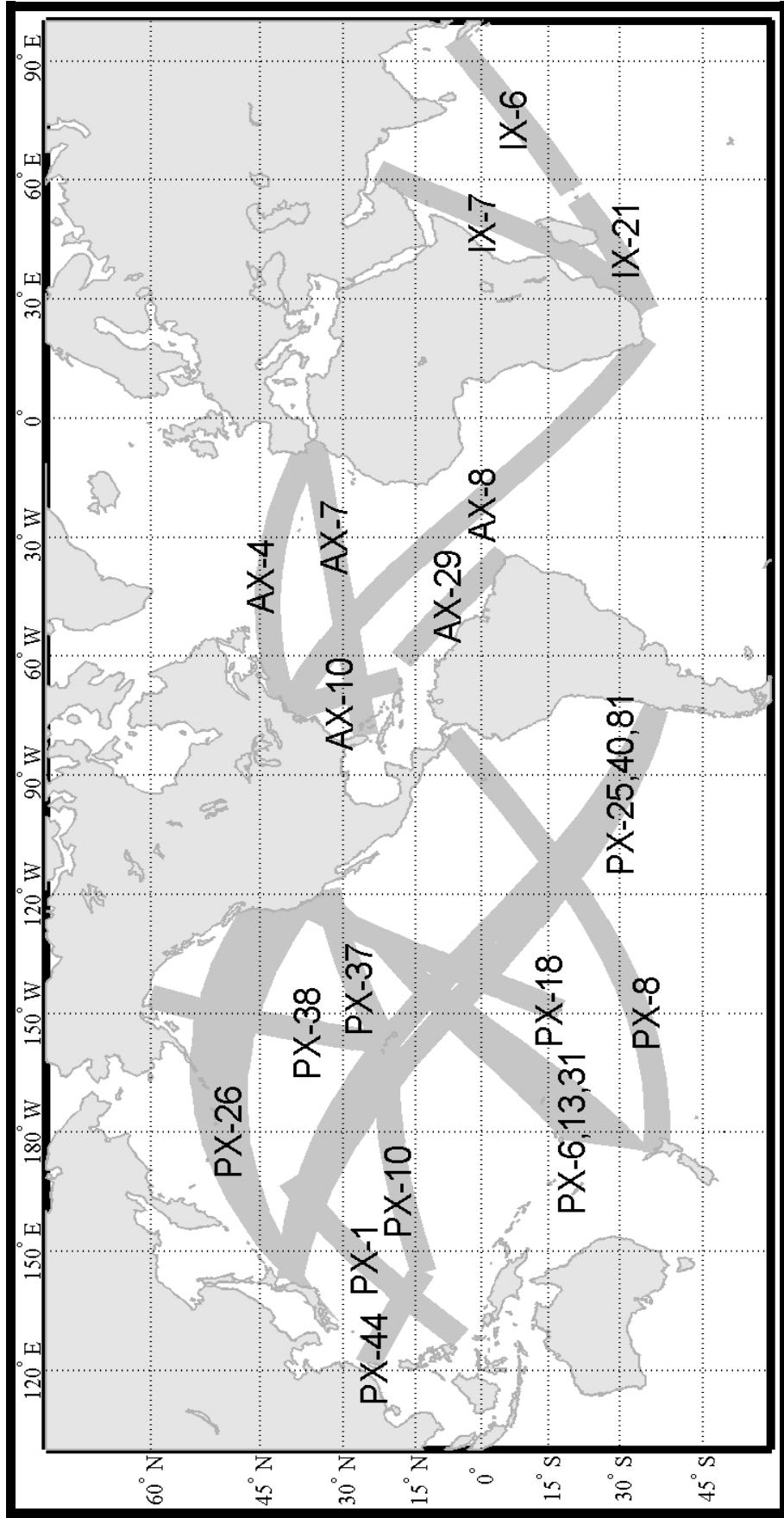


“Dot” plot of all Meteorological observations collected via SEAS during the year 2000

Total number of SEAS Meteorological observations = 107,030



## Principal GOOS XBT Routes during 2000



Only principal XBT routes are shown in this schematic. Routes listed on the following pages that are not shown here are not principal routes.

***SEAS XBT Counts by route for the year 2000***  
 (as of February 14, 2001)

The Chart below is a list showing the XBT routes and the number of XBTs collected by each VOS ship for each month during the year 2000. The number per year indicates the required number of XBTs that should be collected per year as mandated by the SOOPIP. The number per month indicates the required number of XBTs that should be collected per month per ship. The monthly totals indicate the actual number of XBTs collected per month.

***ATLANTIC OCEAN***

<b>ROUTE A02</b>		<b>NEWFOUNDLAND to ICELAND</b>												#/YEAR = 200	#/MON = 17		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total			
<b>HANSEWEALL</b>	16	31	7	0	0	0	0	0	0	0	0	0	0	54			
<b>SELFOSS</b>	28	0	0	17	0	31	0	0	0	0	0	0	0	76			
<b>ROUTE TOTAL</b>	44	31	7	17	0	31	0	0	0	0	0	0	0	130			

<b>ROUTE A04</b>		<b>NEW YORK to GIBRALTAR/LISBON</b>												#/YEAR = 440	#/MON = 37		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total			
<b>DELAWARE BAY</b>	0	0	0	0	0	0	0	0	0	0	0	27	16	43			
<b>ENDEAVOR</b>	0	3	16	20	26	29	9	15	16	27	14	31	206				
<b>ENDURANCE</b>	5	2	4	0	0	0	0	0	0	0	0	0	0	11			
<b>ENTERPRISE</b>	4	28	24	28	19	0	25	33	27	18	9	1	1	216			
<b>ROUTE TOTAL</b>	9	33	44	48	45	29	34	48	43	45	50	48	48	476			

<b>ROUTE A07</b>		<b>GULF OF MEXICO to GIBRALTAR</b>												#/YEAR = 520	#/MON = 43		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total			
<b>MORELOS</b>	29	27	0	28	0	7	31	188	0	34	0	0	0	344			
<b>ROUTE TOTAL</b>	29	27	0	28	0	7	31	188	0	34	0	0	0	344			

ROUTE A08		NEW YORK to CAPE OF GOOD HOPE #/YEAR = 960 #/MON = 80												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOLIZWE		43	14	49	0	57	50	6	56	11	83	65	144	578
NOMZI		84	17	0	13	43	6	50	25	12	12	0	0	262
<b>ROUTE TOTAL</b>		127	31	49	13	100	56	56	81	23	95	65	144	840

ROUTE A10		NEW YORK to TRINIDAD/CARACAS #/YEAR = 200 #/MON 17												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX CRUSADER		21	0	16	0	0	0	0	0	0	0	0	0	37
CSX HAWAII		0	0	0	0	8	17	4	16	11	23	20	7	106
DELAWARE BAY		0	0	0	0	0	0	0	0	0	0	0	21	21
<b>ROUTE TOTAL</b>		21	0	16	0	8	17	4	16	11	23	20	28	164

ROUTE A29		NEW YORK to BRAZIL #/YEAR = 360 #/MON = 30												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COPACABANA		0	0	0	0	0	0	0	0	0	0	15	0	15
<b>ROUTE TOTAL</b>		0	0	0	0	0	0	0	0	0	0	15	0	15

ROUTE A32		NEW YORK to BERMUDA #/YEAR = 120 #/MON = 10												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
OLEANDER		0	0	0	0	0	24	21	24	0	26	2	0	97
<b>ROUTE TOTAL</b>		0	0	0	0	0	24	21	24	0	26	2	0	97

ROUTE A33		BOSTON to HALIFAX/NOVA SCOTIA #/YEAR = 120 #/MON = 10												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
HANSEWALL		1	0	0	0	0	0	0	0	0	0	0	0	1
SELF OSS		9	1	10	9	7	0	4	0	0	0	0	0	40
SKOGAFOSS		0	0	0	0	0	0	0	0	0	6	0	0	6
<b>ROUTE TOTAL</b>		10	1	10	9	7	0	4	0	0	6	0	0	47

**OFF ROUTE SAMPLING**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>AMERICA STAR</b>	0	11	0	0	0	0	0	0	0	0	0	0	11
<b>CHEVRON MISSISSIPPI</b>	0	0	1	0	0	0	0	0	0	1	0	0	2
<b>COLUMBUS COROMA</b>	0	0	0	0	0	0	0	0	0	1	0	0	1
<b>COPACABANA</b>	0	0	0	0	0	0	0	0	0	1	0	0	1
<b>DIRECT FALCON</b>	0	0	0	0	0	0	2	2	3	0	0	0	7
<b>HANSEWALL</b>	2	0	0	0	0	0	0	0	0	0	0	0	2
<b>MCARTHUR</b>	0	0	0	0	0	0	0	35	29	58	63	25	210
<b>MELBOURNE STAR</b>	0	0	0	1	0	0	0	0	0	0	0	0	1
<b>POLAR SEA</b>	0	0	0	0	0	0	0	0	0	0	0	11	11
<b>POLYNESIA</b>	0	0	0	0	0	0	0	1	0	0	0	0	1
<b>ROSSEL CURRENT</b>	1	1	0	0	0	0	0	2	0	0	0	0	4
<b>SAGA SPRAY</b>	0	0	0	0	2	0	0	0	0	0	0	0	2
<b>SELF OSS</b>	0	0	0	0	0	1	0	0	0	0	0	0	1
<b>SKOGAFOSS</b>	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>TAUSALA SAMOA</b>	0	0	0	0	0	2	0	0	0	0	0	0	2
<b>ROUTE TOTAL</b>	3	12	1	1	2	3	2	40	33	61	63	36	257

**INDIAN OCEAN**

**ROUTE I06 MAUR./LA REUNION to MALACCA STRAIT #/YEAR = 340 #/MON 28**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>P&amp;O NEDLLOYD CO</b>	0	0	0	0	0	0	0	6	25	9	10	11	61
<b>S. A. VAAL</b>	15	1	4	0	0	0	18	9	22	0	6	16	91
<b>ROUTE TOTAL</b>	15	1	4	0	0	0	18	15	47	9	16	27	152

**ROUTE I07 CAPE OF GOOD HOPE to PERSIAN GULF #/YEAR = 480 #/MON = 40**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>KAZIMAH</b>	23	0	46	0	47	0	0	0	0	0	0	0	116
<b>ROUTE TOTAL</b>	23	0	46	0	47	0	0	0	0	0	0	0	116

**ROUTE I21 CAPE OF GOOD HOPE to MAURITIUS #/YEAR = 300 #/MON = 25**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>P&amp;O NEDLLOYD CO</b>	0	0	0	0	0	0	0	3	3	0	9	13	28
<b>S. A. ORANJE</b>	0	0	4	0	0	0	0	0	0	0	0	0	4
<b>S. A. VAAL</b>	6	0	7	0	0	0	12	0	19	0	11	0	55
<b>ROUTE TOTAL</b>	6	0	11	0	0	0	12	3	22	0	20	13	87

**ROUTE I28 DUMONT d'URVILLE to TASMANIA #/YEAR = 180 #/MON = 15**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>POLAR SEA</b>	0	0	0	0	0	0	0	0	0	0	0	0	11
<b>ROUTE TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	0	11

**PACIFIC OCEAN**

**ROUTE P01 SEATTLE/VANCOUVER to INDONESIA #/YEAR = 860 #/MON = 72**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>EMERALD INDAH</b>	0	59	23	26	0	46	0	0	0	0	0	55	209
<b>RUBY INDAH</b>	49	16	0	0	0	0	0	0	16	6	0	40	127
<b>ROUTE TOTAL</b>	49	75	23	26	0	46	0	0	16	6	0	95	336

**ROUTE P06 SUVA (FIJI) to AUCKLAND #/YEAR = 160 #/MON = 13**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>ARGENTINA STAR</b>	7	0	0	0	0	0	0	0	0	0	0	0	7
<b>COLUMBUS COROMA</b>	12	12	11	10	11	0	38	0	0	34	11	0	139
<b>COLUMBUS FLORIDA</b>	0	0	0	10	0	0	0	9	9	0	3	0	31
<b>ROUTE TOTAL</b>	19	12	11	20	11	0	38	9	9	34	14	0	177

**ROUTE P08 AUCKLAND to PANAMA #/YEAR = 700 #/MON = 58**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>AMERICA STAR</b>	9	7	55	1	49	0	4	44	0	54	0	13	236
<b>MELBOURNE STAR</b>	0	0	0	63	0	9	53	0	57	0	1	53	236
<b>QUEENSLAND STAR</b>	0	0	0	0	61	52	50	1	6	47	53	52	322
<b>ROUTE TOTAL</b>	9	7	55	64	110	61	107	45	63	101	54	118	794

**ROUTE P09 HAWAII to FIJI/AUCKLAND #/YEAR = 440 #/MON = 37**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>COLUMBUS COROMA</b>	0	0	0	27	0	0	0	0	0	14	16	0	57
<b>COLUMBUS FLORIDA</b>	0	0	0	0	0	0	0	24	0	0	0	0	24
<b>ROSSEL CURRENT</b>	0	0	0	0	0	0	0	0	0	0	0	49	49
<b>ROUTE TOTAL</b>	0	0	0	27	0	0	0	24	0	14	16	49	130

**ROUTE P10 HAWAII to GUAM/SAIPAN #/YEAR = 440 #/MON = 37**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>CSX ENTERPRISE</b>	26	27	8	11	24	27	16	13	28	14	6	17	217
<b>CSX NAVIGATOR</b>	12	6	12	18	0	14	22	5	17	34	20	12	172
<b>CSX PACIFIC</b>	0	7	7	0	0	0	0	0	0	0	0	0	14
<b>ROUTE TOTAL</b>	38	40	27	29	24	41	38	18	45	48	26	29	403

**ROUTE P11 FLORES SEA to JAPAN #/YEAR = 320 #/MON = 27**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>EMERALD INDAH</b>	0	0	0	0	0	0	0	0	0	17	0	0	17
<b>ROUTE TOTAL</b>	0	0	0	0	0	0	0	0	0	17	0	0	17

**ROUTE P12 TAHITI to NOUMEA #/YEAR 370 #/MON 31**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>COLUMBUS FLORIDA</b>	0	0	0	0	0	0	0	6	10	0	0	0	16
<b>ROUTE TOTAL</b>	0	0	0	0	0	0	0	6	10	0	0	0	16

**ROUTE P13 NEW ZEALAND to CALIFORNIA #/YEAR = 770 #/MON = 64**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>COLUMBUS FLORIDA</b>	0	65	19	40	49	0	70	0	0	51	14	41	349
<b>DIRECT FALCON</b>	0	0	0	0	0	0	0	0	51	34	11	50	146
<b>ROSSEL CURRENT</b>	0	0	0	40	18	0	0	0	9	57	0	0	124
<b>ROUTE TOTAL</b>	0	65	19	80	67	0	70	0	60	142	25	91	619

**ROUTE P18 TAHITI to CALIFORNIA #/YEAR = 440 #/MON = 37**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>ARGENTINA STAR</b>	2	30	0	0	0	0	0	0	0	0	0	0	32
<b>COLUMBUS COROMA</b>	0	3	35	0	0	35	0	0	36	0	0	34	143
<b>COLUMBUS FLORID</b>	0	0	36	0	0	27	7	28	21	17	0	0	136
<b>NORDCLIFF</b>	37	0	0	0	0	0	0	0	0	0	0	0	37
<b>POLYNESIA</b>	40	38	37	29	6	20	41	7	27	20	19	34	318
<b>TAUSALA SAMOA</b>	0	0	0	0	0	37	35	33	35	35	36	27	238
<b>ROUTE TOTAL</b>	79	71	108	29	6	119	83	68	119	72	55	95	904

**ROUTE P25 VALPARAISO to JAPAN/KOREA #/YEAR = 1,320 #/MON = 110**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>NACRE</b>	10	41	74	0	90	26	39	90	0	101	25	26	522
<b>ROUTE TOTAL</b>	10	41	74	0	90	26	39	90	0	101	25	26	522

**ROUTE P26 TRANSPAC to TRANSPAC #/YEAR 5,500 #/MON 458**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>CSX ENTERPRISE</b>	8	30	28	21	29	32	13	7	1	9	6	0	184
<b>CSX NAVIGATOR</b>	37	0	29	0	0	0	0	0	0	0	0	0	66
<b>CSX PACIFIC</b>	5	0	9	34	0	0	0	0	0	0	0	0	48
<b>CSX TRADER</b>	2	3	0	0	0	0	0	0	0	0	0	0	5
<b>EMERALD INDAH</b>	0	0	0	0	17	10	0	49	27	0	0	0	103
<b>RUBY INDAH</b>	33	0	16	0	0	2	0	0	0	0	25	2	78
<b>SAGA SPRAY</b>	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>SEA-LAND DEFEND</b>	7	21	0	0	26	0	0	0	0	0	28	15	97
<b>SEA-LAND DEVELO</b>	31	14	41	0	9	24	25	56	1	27	16	0	244
<b>SEA-LAND EXPRES</b>	0	0	18	22	0	30	13	0	39	7	21	0	150
<b>SKAUBOARD</b>	43	22	27	26	36	2	0	0	0	0	0	0	156
<b>SKAUBRYN</b>	3	1	41	49	14	67	61	8	0	41	3	3	291

<b>SKAUGRAN</b>	0	0	0	5	5	0	10	0	10	8	11	2	51
<b>TAI HE</b>	44	3	39	31	15	30	28	15	30	26	17	38	316
<b>WESTWOOD BELINDA</b>	25	17	29	31	37	20	18	14	8	4	16	5	224
<b>ROUTE TOTAL</b>	239	111	277	219	188	217	168	149	116	122	143	65	2014

**ROUTE P28 TAHITI to SYDNEY/AUCKLAND #/YEAR = 240 #/MON = 20**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>ARGENTINA STAR</b>	8	0	0	0	0	0	0	0	0	0	0	0	8
<b>COLUMBUS COROMA</b>	0	24	0	0	7	15	0	0	25	0	0	20	91
<b>COLUMBUS FLORIDA</b>	2	0	24	0	0	16	0	0	22	0	0	0	64
<b>ROUTE TOTAL</b>	10	24	24	0	7	31	0	0	47	0	0	20	163

**ROUTE P29 TAHITI to VALPARAISO #/YEAR 560 #/MON 47**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
<b>COPACABANA</b>	0	0	0	0	0	0	0	0	0	0	0	12	33	45
<b>ROUTE TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	12	33	45

**ROUTE P31 CALIFORNIA to NOUMEA/SUVA #/YEAR 880 #/MON 73**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>ARGENTINA STAR</b>	29	0	0	0	0	0	0	0	0	0	0	0	29
<b>COLUMBUS COROMA</b>	74	14	41	0	38	44	40	71	20	22	41	0	405
<b>COLUMBUS FLORIDA</b>	0	0	0	1	27	0	0	0	0	0	0	0	28
<b>POLAR SEA</b>	0	0	0	0	0	0	0	0	0	1	25	0	26
<b>POLYNESIA</b>	0	0	1	0	0	0	0	0	0	0	4	0	5
<b>ROSSEL CURRENT</b>	2	0	62	0	31	33	0	0	0	0	55	0	183
<b>TAUSALA SAMOA</b>	0	0	0	0	0	0	0	0	0	0	0	6	6
<b>ROUTE TOTAL</b>	105	14	104	1	96	77	40	71	20	23	125	6	682

**ROUTE P32 AUCKLAND to SYDNEY #/YEAR = 170 #/MON = 15**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>MELBOURNE STAR</b>	0	0	0	0	1	0	0	0	0	0	0	0	1
<b>ROUTE TOTAL</b>	0	0	0	0	1	0	0	0	0	0	0	0	1

**ROUTE P37 HAWAII to CALIFORNIA #/YEAR 250 #/MON 21**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>COLUMBUS COROMA</b>	0	0	0	18	0	0	0	0	0	0	23	0	41
<b>COLUMBUS FLORIDA</b>	0	0	0	0	0	0	0	13	0	0	0	0	13
<b>CSX ENTERPRISE</b>	7	25	9	8	0	16	13	9	16	0	17	0	120
<b>CSX NAVIGATOR</b>	4	0	3	7	0	0	0	0	0	0	0	0	14
<b>CSX PACIFIC</b>	0	5	5	0	0	0	0	0	0	0	0	0	10
<b>SEA-LAND DEFEND</b>	0	0	0	0	0	0	0	0	0	0	0	1	1
<b>ROUTE TOTAL</b>	11	30	17	33	0	16	13	22	16	0	40	1	199

**ROUTE P38 HAWAII to ALASKA #/YEAR = 320 #/MON = 27**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>CHEVRON MISSISS</b>	36	36	28	0	54	13	46	33	28	3	28	1	306
<b>ROUTE TOTAL</b>	36	36	28	0	54	13	46	33	28	3	28	1	306

**ROUTE P40 HAWAII to JAPAN #/YEAR 450 #/MON 38**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>NACRE</b>	45	0	4	35	0	43	0	15	29	0	47	0	218
<b>ROUTE TOTAL</b>	45	0	4	35	0	43	0	15	29	0	47	0	218

**ROUTE P44 TAIWAN to GUAM #/YEAR 160 #/MON 13**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>CSX ENTERPRISE</b>	12	1	15	10	8	12	9	7	12	0	5	12	103
<b>CSX NAVIGATOR</b>	18	0	11	11	0	10	0	10	9	19	1	6	95
<b>CSX PACIFIC</b>	0	4	9	1	0	0	0	0	0	0	0	0	14
<b>ROUTE TOTAL</b>	30	5	35	22	8	22	9	17	21	19	6	18	212

**ROUTE P49 JAPAN/TAIWAN to SINGAPORE #/YEAR 300 #/MON 25**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>CSX ENTERPRISE</b>	0	0	0	0	2	0	0	0	0	0	0	0	2
<b>CSX NAVIGATOR</b>	0	0	0	0	0	0	2	0	0	0	0	0	2
<b>P&amp;O NEDLLOYD CO</b>	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>ROUTE TOTAL</b>	0	0	0	0	2	0	2	0	1	0	0	0	5

**ROUTE P50 VALPARAISO to AUCKLAND #/YEAR = 720 #/MON = 60**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>LYDIA OLDENDORF</b>	8	17	0	48	11	0	0	0	55	0	0	52	191
<b>ROUTE TOTAL</b>	8	17	0	48	11	0	0	0	55	0	0	52	191

**ROUTE P81 HONOLULU to CORONEL (CHILE) #/YEAR = 800 #/MON = 67**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>NACRE</b>	26	49	0	75	3	21	58	0	82	0	20	38	372
<b>ROUTE TOTAL</b>	26	49	0	75	3	21	58	0	82	0	20	38	372

**Total monthly XBT collections for the year 2000:**

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
1001	733	994	824	887	900	893	982	916	1001	887	1044

**Yearly total = 11,062**

**Delayed Mode XBT Data Received at AOML**  
**from January through December 2000 and forwarded to the**  
**National Oceanographic Data Center (NODC) for archival**

<b><u>Call Sign</u></b>	<b><u>Ship</u></b>	<b><u>Data Received</u></b>
<b>BOAB</b>	<b>TAI HE</b>	8/1/96 - 9/4/96 9/13/96 - 10/16/96 12/7/99 - 2/14/00 2/26 - 3/29/00 4/8 - 5/11/00 5/25 - 6/24/00 5/25 - 6/24/00 7/3 - 8/5/00 8/18 - 9/20/00 9/26 - 10/31/00
<b>C6CE7</b>	<b>WESTWOOD BELINDA</b>	9/17/99 - 12/13/99 9/17/99 - 12/13/99 12/27/99 - 2/7/00 12/27/99 - 2/7/00 2/22 - 4/4/00 4/18/00 - 5/31/00 6/14/00 - 7/24/00
<b>C6MD8</b>	<b>ARGENTINA STAR</b>	12/29/99 - 2/9/00 12/29/99 - 2/7/00
<b>D5NZ</b>	<b>MV POLYNESIA</b>	1/13/00 - 1/22/00 1/13/00 - 1/22/00 2/14/00 - 3/30/00 2/14/00 - 3/30/00 4/23/00 - 5/2/00
<b>DDGY</b>	<b>COLUMBUS COROMANDAL</b>	12/21/99 1/6/00 - 3/10/00 3/29 - 4/27/00 5/3 - 6/14/00 5/3 - 6/14/00 7/4/00 - 8/2/00 8/5/00 - 9/21/00

		10/10 - 11/9/00
<b>DDGF</b>	<b>COLUMBUS FLORIDA</b>	12/22/99 - 1/4/00 2/6/00 - 3/23/00 3/26 - 5/8/00 3/26 - 5/8/00 5/14 - 7/2/00 5/14 - 7/2/00 7/5 - 8/16/00 7/5 - 8/16/00 8/21 - 10/5/00 10/8 - 11/8/00
<b>DNMR</b>	<b>POLYNESIA</b>	6/22 - 7/4/00 7/25 - 8/2/00 8/22/00 9/24/00 - 10/10/00 10/24 - 11/4/00
<b>ELWQ5</b>	<b>DIRECT FALCON</b>	7/18 - 9/15/00 10/22 - 11/3/00
<b>GOVL</b>	<b>MELBOURNE STAR</b>	4/3 - 5/2/00 6/28 - 7/13/00
<b>GZKA</b>	<b>AMERICA STAR</b>	12/8/99 - 4/19/00 5/17 - 5/30 7/4/00 7/31/00 - 8/14/00
<b>J8FI6</b>	<b>ROSSEL - CURRENT</b>	12/25/99 - 1/4/00 12/25/99 - 1/4/00 2/18 - 5/6/00 2/18 - 5/6/00 8/7 - 13/00 9/29 - 10/14/00
<b>KDJB</b>	<b>SEA-LAND DEFENDER</b>	1/25/00 - 2/23/00 5/23/00 - 5/30/00
<b>KGJB</b>	<b>SEA-LAND DEFENDER</b>	5/23/00 - 5/30/00
<b>KRGB</b>	<b>CSX-ENTERPRISE</b>	1/14 - 2/11/00

		1/14 - 2/11/00 2/14 - 3/17/00 3/23 - 4/21/00 4/23 - 5/26/00 6/22 - 6/30/00 7/7 - 9/5/00 9/23 10/7 - 11/00 10/14 - 11/14/00
<b>KGID</b>	<b>SEA-LAND EXPRESS</b>	3/3 - 4/6/00
<b>KGJD</b>	<b>SEA-LAND EXPRESS</b>	6/4 -13/00 6/4 - 13/00 7/22 -26/00 9/5 - 14/00 10/19 - 11/21/00
<b>KIRF</b>	<b>CSX HAWAII</b>	5/27 - 7/10/00
<b>KIRH</b>	<b>SEA-LAND TRADER</b>	1/16 - 2/15/00
<b>KHRH</b>	<b>SEA-LAND DEVELOPER</b>	2/19 - 3/21/00 2/19 - 3/19/00 5/1 - 6/20/00 5/1 - 6/20/00 7/28 - 8/29/00 9/26 - 11/6/00
<b>LACF5</b>	<b>SKAUBOARD</b>	12/29/99 - 1/30/00 2/10 - 3/24/00
<b>LADB2</b>	<b>SKAUGRAN</b>	12/21/99 4/18/00-5/29/00 7/14/00 - 7/22/00 9/15 - 11/7/00
<b>LAJV4</b>	<b>SKAUBRYN</b>	1/14 - 3/12/00 3/25 - 6/16/600 6/24/00 - 7/26/00 8/16 - 10/31/00
<b>LATI4</b>	<b>SAGA SPRAY</b>	7/18/99 8/17/99 11/30/99

		12/10 - 11/99 1/4/00
<b>MQLN7</b>	<b>NOLIZWE</b>	1/21 - 2/5/00 1/21 - 5/9/00 3/14 - 3/28/00 5/1 - 5/9/00 5/1 - 16/00 6/18 - 7/2/00 8/8 - 23/00
<b>MQLN7</b>	<b>SAFMARIN NOLIZWE</b>	9/28 - 10/12/00
<b>MTQU3</b>	<b>NOMZI</b>	1/20 - 2/13/00 4/3 - 4/21/00 5/19 - 6/2/00 7/6 - 19/00 8/21 - 9/5/00
<b>MZBM7</b>	<b>QUEENSLAND STAR</b>	5/2 - 6/26/00
<b>P3GB4</b>	<b>TUI PACIFIC</b>	1/9 - 1/18/00 1/9 - 1/18/00
<b>PGGB</b>	<b>TMM MORELOS</b>	6/29 - 7/8/00 8/21 10/6 - 10/10/00
<b>PJJU</b>	<b>OLEANDER</b>	1/13 - 14/99 2/12 - 13/99 3/13/99 3/13/99 4/9 - 14/99 6/4 - 9/99 7/16 - 21/99 8/14 - 19/99 10/9/99 11/12 - 13/99 12/4/99 1/14 - 19/00 3/3 - 8/00 4/18 - 20/00 6/8-13/00 6/15 - 7/12/00 8/4 - 9/00 11/10 -14/00

<b>S6ID</b>	<b>EMERALD INDAH</b>	3/24 - 8/14/00
<b>S6LA</b>	<b>SELFFOSS</b>	3/20 - 21/00
		1/17 - 24/00
		1/23 -24/00
		2/28 - 3/21/00
		3/20 - 21/00
		3/24 - 4/16/00
		3/24 - 4/19/00
		4/15 - 16/00
		5/16 - 6/13/00
		5/16 - 17/00
		5/16 - 7/8/00
<b>V2A03</b>	<b>HANSEWALL</b>	11/25 - 12/12/99
		1/8 - 2/6/00
<b>V2KS</b>	<b>TAUSALA-SAMOA</b>	6/6 - 21/00
		7/11 - 19/00
		8/10 - 18/00
		9/10 - 18/00
		10/11 - 19/00
		11/11 - 20/00
<b>V2XM</b>	<b>SKOGAFOSS</b>	1/16 - 19/00
		9/19 - 10/15/00
		11/11 - 12/00
<b>V2XM</b>	<b>GODAFOSS</b>	1/16 - 1/19/99
<b>WAUU</b>	<b>ENDURANCE</b>	1/27 - 3/4/00
<b>WAUW</b>	<b>ENDEAVOR</b>	10/12/99 10/11 - 12/30/99 2/18 - 3/26/00 3/31 - 5/6/00 5/12 - 7/24/00 8/1 - 9/3/00
<b>WAUY</b>	<b>ENTERPRISE</b>	1/3 - 2/11/00 2/21 - 4/1/00 4/4 - 5/23/00 7/4 - 8/2/00
<b>WPGK</b>	<b>CSX-NAVIGATOR</b>	7/2 - 9/2/99 12/23/99 - 1/20/00

		12/23/99 - 1/20/00 1/26/00 - 2/4/00 3/5 - 3/30/00 4/6 - 21/00 6/22 - 7/1/00 7/25 - 8/5/00 8/31 - 9/9/00 10/3 - 14/00 11/8 - 14/00
<b>WSRL</b>	<b>SEA-LAND PACIFIC</b>	1/7 - 8/00 1/7 - 8/00 2/10 - 4/14/00
<b>WTEJ</b>	<b>MCARTHUR</b>	7/17 - 12/99 7/17 - 12/99
<b>WXBR</b>	<b>CHEVRON MISSISSIPPI</b>	11/23/99 - 1/18/00 11/23 - 11/29/99 1/3 - 18/00 2/2 - 6/00 2/2 - 15/00 2/2 - 22/00 6/30 - 7/14/00
<b>3EZ16</b>	<b>NACRE</b>	9/9 - 10/11/98 9/9 - 10/11/98 11/19/98 - 1/02/99 5/11 - 7/9/99 5/27 - 7/1/99
<b>9KKL</b>	<b>KAZIMAH</b>	8/13 - 12/31/99 3/6 - 5/23/00
<b>9VND</b>	<b>RUBY INDAH</b>	10/30/99 - 1/31/00 1/1/00 3/25/00 10/30/99 - 5/26/00

**Delayed Mode Meteorological Data Received at AOML**  
**and submitted to the National Climatic Data Center (NCDC) from March**  
**through December 2000 \***

(\*prior to March 2000 this data was submitted to the SEAS office in Silver Spring, Maryland)

**March 2000**

<b><u>Call Sign</u></b>	<b><u>Ship Name</u></b>
3FRY9	UNKNOWN
BOAB	TAI HE
C6CE7	WESTWOOD BELINDA
D5NZ	MV POLYNESIA
DGGD	UNKNOWN
ELWQ5	DIRECT FALCON
KGJB	SEA-LAND DEFENDER
KRGB	CSX ENTERPRISE
LACF5	SKAUBOARD
LAJV4	SKAUBRYN
LATI4	SAGA SPRAY
P3GB4	TUI PACIFIC
S6ID	EMERALD INDAH
V7BZA	UNKNOWN
WGZO	UNKNOWN
WPGK	CSX NAVIGATOR
WPKS	UNKNOWN
WSRL	SEA-LAND PACIFIC
WTEJ	MACARTHUR
WXBR	CHEVRON MISSISSIPPI

**April 2000**

3FRY9	UNKNOWN
BOAB	TAI HE
C6CE7	SEALAND PACIFIC
D5NZ	MV POLYNESIA
DGGD	UNKNOWN
KGJD	SEALAND EXPRESS
KRGB	UNKNOWN
KRHX	UNKNOWN
KRPD	UNKNOWN

<u>Call Sign</u>	<u>Ship Name</u>
LACF5	SKAUBORD
LATI4	SAGA SPRAY
P3GB4	TUI PACIFIC
V7BZ4	UNKNOWN
WCHF	UNKNOWN
WGLA	UNKNOWN
WGKO	UNKNOWN
WJBJ	UNKNOWN
WPGK	CSX NAVIGATOR
WPKD	UNKNOWN
WPKS	CHEVRON MISSISSIPPI
WSRL	SEALAND PACIFIC
WTEJ	MCARTHUR
WXBR	CHEVRON MISSISSIPPI
ZSDS	UNKNOWN

### May 2000

BOAB	TAI HE
D5NZ	MV POLYNESIA
KHRH	SEALAND DEVELOPER
KRGB	CSX ENTERPRISE
V2KS	TAUSALA-SAMOA
WSRL	SEALAND PACIFIC

### June 2000

9KKL	KAZIMAH
BOAB	TAI-HE
C6CE7	WESTWOOD BELINDA
ELWQ5	DIRECT FALCON
KGJB	SEA-LAND DEFENDER
KGJD	SEA-LAND EXPRESS
KHRH	SEA-LAND DEVELOPER
LADB2	SKAUGRAN
MQLN7	SAFMARIN NOLIZWE
PJJU	OLEANDER
WAUU	ENDURANCE

<u>Call Sign</u>	<u>Ship Name</u>
WAUW	ENDEAVOR
WAUY	ENTERPRISE
WPGK	CSX-NAVIGATOR

**July 2000**

KRGB	CSX-ENTERPRISE
PGGB	TMM MORELOS
PJU	OLEANDER
V2KS	TAUSALA-SAMOA

**August 2000**

9KKL	KAZIMAH
9VND	RUBY INDAH
BOAB	TAI-HE
C6CE7	WESTWOOD BELINDA
LAVJ4	SKAUBRYN
MQLN7	NOLIZWE
MTQU3	NOMZI
PJU	OLEANDER
V2KS	TAUSALA-SAMOA
WAUU	ENDURANCE
WAUW	ENDEAVOR
WAUY	ENTERPRISE
WPGK	CSX-NAVIGATOR

**September 2000**

BOAB	TAI HE
D5NZ	MV POLYNESIA
ELWQ5	DIRECT FALCON
KGJB	SEA-LAND DEFENDER
KGJD	SEA-LAND EXPRESS
KHRH	SEA-LAND DEVELOPER
LADB2	SKAUGRAN
LAJV4	SKAUBRYN
S6ID	EMERALD INDAH

<u>Call Sign</u>	<u>Ship Name</u>
V2KS	TAUSALA-SAMOA
WXBR	CHEVRON MISSISSIPPI

**October 2000**

BOAB	TAI HE
GOVL	MELBOURNE STAR
GZKA	AMERICA STAR
J8FI6	ROSSEL-CURRENT
KGJD	SEA-LAND DEFENDER
KIRF	CSX-HAWAII
KRGB	CSX-ENTERPRISE
MQLN7	NOLIZWE
MTQU3	NOMZI
MZBM7	QUEENSLAND STAR
V2KS	TAUSALA-SAMOA
WAUW	ENDEAVOR
WAUY	ENTERPRISE
WPGK	CSX-NAVIGATOR

**November 2000**

9VND	RUBY INDAH
BOAB	TAI HE
KGJB	CSX-ENTERPRISE
KHRH	SEA-LAND DEVELOPER
LADB2	SKAUGRAN
LAJV4	SKAUBRYN
PGBB	TMM MORELOS
PJU	OLEANDER
V2KS	TAUSALA-SAMOA
WPGK	CSX-NAVIGATOR

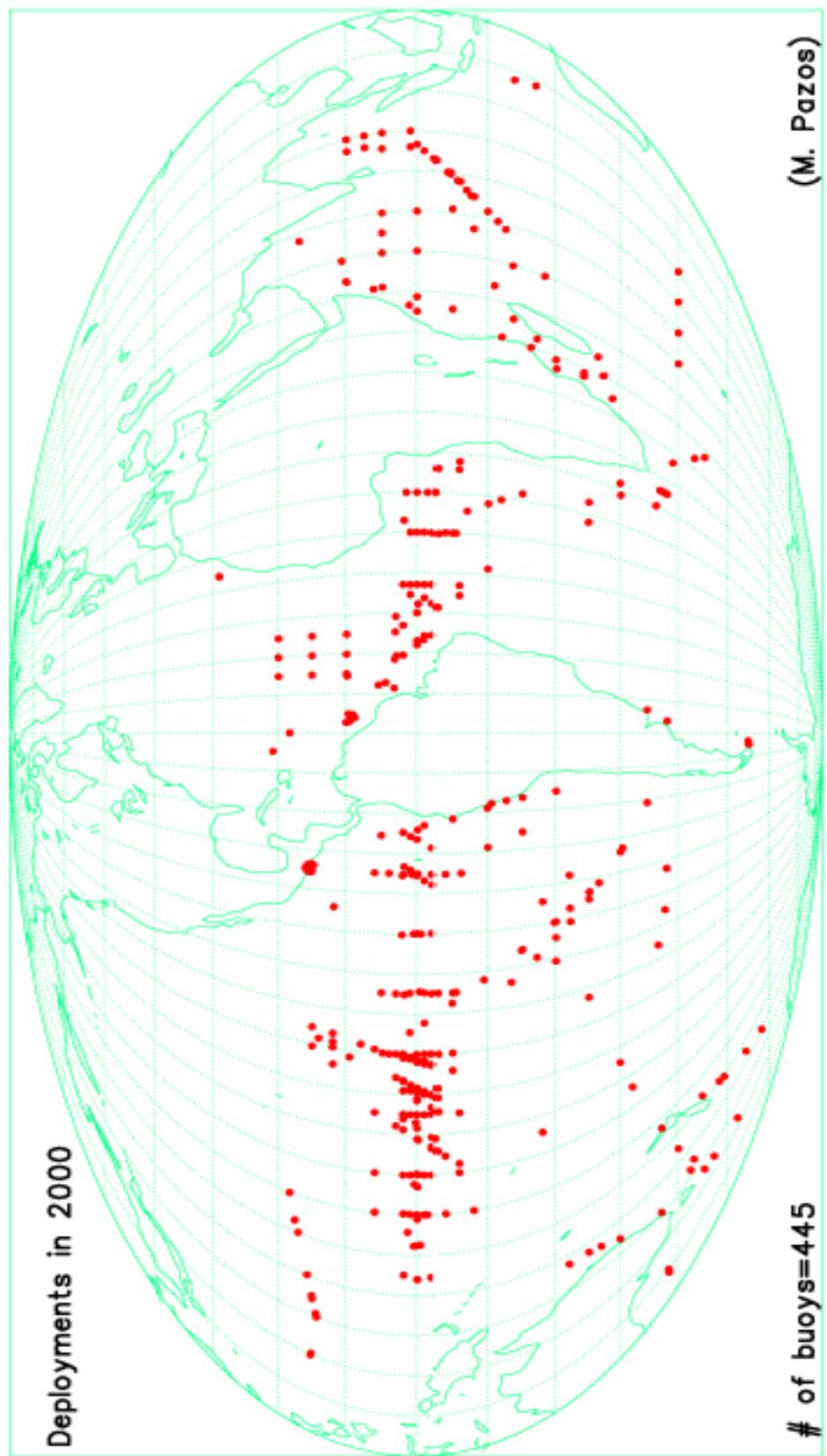
**December 2000**

ELWQ5	DIRECT FALCON
J8FI6	ROSSEL-CURRENT
KGJD	SEA-LAND EXPRESS

KRGB	CSX-ENTERPRISE
LADB2	SKAUGRAN
PJJU	OLEANDER
V2KS	TAUSALA-SAMOA
WPGK	CSX-NAVIGATOR

The plot on the following page shows new drifter deployments made during 2000

## *Status of Global Drifter Array*



## *Statistics*

*The chart below displays plans for the deployment of drifters from October 2000 through September 2000.*

### **2000 - 2001 Plans**

**Plans are for the deployment of 419 Drifters during the period between October 2000 and September 2001.**

<b><u>Tropical Oceans</u></b>	<b><u># of Drifters</u></b>	<b><u>Southern Oceans</u></b>	<b><u># of Drifters</u></b>
• Tropical Pacific	205	• Pacific	35
• Tropical Atlantic	78	• Atlantic	20
• Tropical Indian	50	• Indian	22
• 20 buoys have been upgraded with Barometers by Meteo-France and the Australian Bureau of Meteorology		• 39% are being upgraded with Barometers	

**9 WOTAN (Tropical Atlantic) drifters will be deployed in the Hurricane formation Region at the beginning of the 2001 Hurricane Season.**

**VOOS/XBT VESSEL SAMPLING SCHEME FOR 2000**

**ATLANTIC**

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
AX-4	Endeavor - WAUW Delaware Bay - WMLG	12	37	440	Std. C Std. C	>1990
AX-7	Contship America - 3EIP3 Morelos - PGBB	12 <b>HD/4</b>	43	520 920	Std. C GOES	>1990
AX-8	Nolizwe - MQLN7 Nomzi - MTQU3	12	80	960	Std. C Std. C	>1990
AX-10	CSX Hawaii - KIRF	12 <b>HD/4</b>	17	200 400	Std. C	1992
AX-29	Copacabana - PPXI	12	48	580	Std. C	>1990
AX-32	Oleander - PJU	12	10	120		1971
AX-33	Skogafoss - V2XM	12	10	12		1974
<b>Atlantic Total</b>						<b><u>4152</u></b>

**Indian Ocean**

<b><u>Line ID</u></b>	<b><u>Ship/Call Sign</u></b>	<b><u>Tran/Yr.</u></b>	<b><u>Mon. Req.</u></b>	<b><u>Ann. Req.</u></b>	<b><u>Trans.</u></b>	<b><u>Start</u></b>
IX-6	S. A. Oranje - ZSDN S.A. Vaal - ZSDS	12	28	340	GOES Std. C	1995
IX-7	Al Awdah - 9KWA Al Samidoon - 9KKF	12	40	480	Std. C Std. C	1995
IX-21	S. A. Oranje - ZSDN S.A. Vaal - ZSDS	12	15	180	GOES Std. C	1995

**Indian Ocean Total**

**1000**

**Pacific Ocean**

PX-1	Emerald Indah - S6ID Ruby Indah - 9VND	12	72	860	Std. C	>1975
PX-8	Melb. Star - GOVL Queen. Star - MZBM7	12	58	700	Std. C Std. C	>1975
PX-9	Col. Coromandel - PDGY	12	37	440	Std. C	>1975

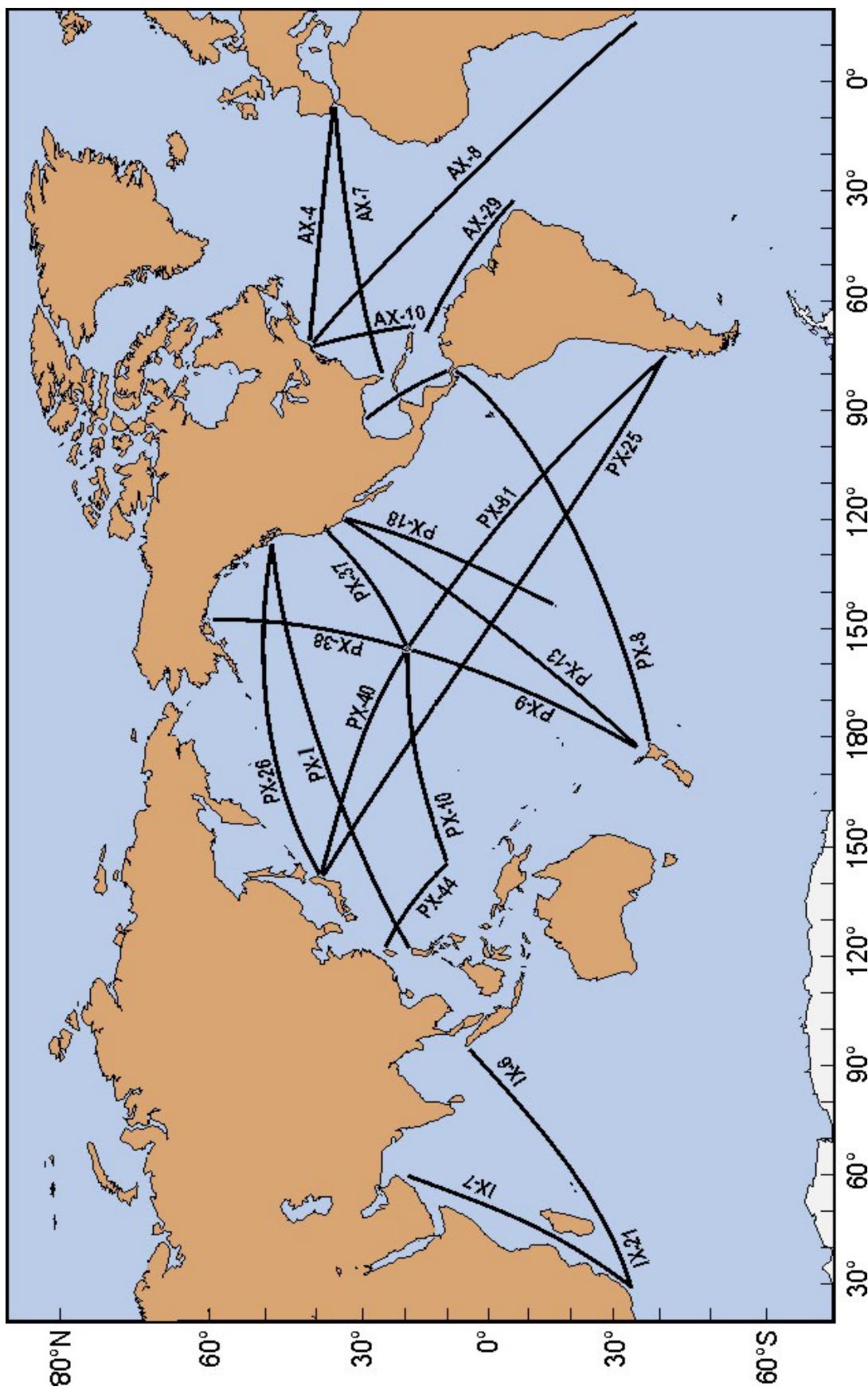
*Pacific Ocean (cont'd)*

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
PX-10	CSX Enterprise - KRGB CSX Navigator - WPGK	12 <b>SIO/HD</b>	37	440	Std. C Std. C	>1975
PX-13	Col. Florida - DDFG Col. Coromandel - PDGY	12	64	770	Std. C Std. C	>1975
PX-18	Polynesia - V2CAZ Tausala Samoa - V2KS	18	24	440	Std. C Std. C	>1975
PX-25	Nacre - 3EZI6	12 <b>SIO/HD</b>	110	1320	Std. C	1998
PX-26	Tai He - BOAB S/L Defender - KGJIB JMA West. Belinda - C6CE7 Skaubryn - LAJV4 Skaugran - LADBB2 Skaubord - LACF5	18	306	5500	Std. C Std. C Std. C Std. C Std. C	>1975
PX-31	Col. Coromandel - PDGY	12	73	880	Std. C	>1975
PX-37	CSX Enterprise - KRGB CSX Navigator - WPGK	12 <b>SIO/HD</b>	21	250	Std. C Std. C	>1975
PX-38	Chev. Miss. - WXBR	12 <b>SIO/HD</b>	27	320	Std. C	1998
PX-40	Nacre - 3EZI6 12	38	450		Std. C	1999

*Pacific Ocean (cont'd)*

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
PX-44	CSX Enterprise - KRGB CSX Navigator - WPGK	12 <b>SIO/HD</b>	13	160	Std. C Std. C	1992
PX-38	Chev. Miss. - WXBR	12 <b>SIO/HD</b>	27	320	Std. C	1998
PX-40	Nacre - 3EZI6	12	38	450	Std. C	1999
PX-44	CSX Enterprise - KRGB CSX Navigator - WPGK	12 <b>SIO/HD</b>	13	160	Std. C Std. C	1992
PX-81	Nacre - 3EZI6	12 <b>SIO/HD</b>	67	800		
<b>Pacific Total</b>			<b>7,830</b>			
<b>Total all Oceans</b>			<b>12,982</b>			

## XBT Lines Operated During 2000



**Sippican Deep Blue XBT Contract Expenditures for the year 2000**

(Table indicates expenditures for both contract and fiscal year)

**Contract Base Year**

<b><u>Destination</u></b>	<b><u>Cases</u></b>	<b><u>Freight</u></b>	<b><u>Invoice Amt.</u></b>
Australia	72	\$ 1,095.03	\$ 25,747.20
Baltimore, MD	108	742.80	38,620.80
Bay St. Louis, MS	162	702.60	57,931.20
Brest, France	135	0.00	48,276.00
Cape Town, So. Africa	54	1,276.04	19,310.40
Durban, So. Africa	54	1,276.04	19,310.40
Honolulu, HA	162	2,043.20	57,931.20
Houston, TX	189	700.80	67,586.40
Miami, FL	241	1,675.64	86,181.60
Norfolk, VA	324	2,225.50	115,862.40
Noumea, New Caledonia	189	3,206.71	67,586.40
Rotterdam, Netherlands	27	490.35	9,655.20
S. Amboy, NJ	54	516.60	19,310.40
San Diego, CA.	18	116.31	6,436.80
Seattle, WA.	540	2,835.62	193,104.00
Terminal Is., CA.	<u>549</u>	<u>2,080.40</u>	<u>196,322.40</u>
<b>Total</b>	<b><u>2,878</u></b>	<b><u>\$ 20,983.64</u></b>	<b><u>\$ 1,029,172.80</u></b>

**FY 00**

Australia	18	\$ 0.00	\$ 6,436.80
Bay St. Louis, MS	162	702.60	57,931.20
Brest, France	54	0.00	19,310.40
Honolulu, HA	81	1,011.00	28,965.60
Houston, TX	135	467.00	48,276.00
Miami, FL	178	1,239.56	63,652.80
Norfolk, VA	216	1,498.70	77,241.60
Noumea, New Caledonia	81	0.00	28,965.60
S. Amboy, NJ	54	516.60	19,310.40
San Diego, CA	18	116.31	6,436.80
Seattle, WA	270	1,617.62	96,552.00
Terminal Is., CA	<u>279</u>	<u>1,266.40</u>	<u>99,770.40</u>
<b>Total</b>	<b><u>1546</u></b>	<b><u>\$ 8,435.79</u></b>	<b><u>\$ 552,849.60</u></b>

## **GTS Statistics for the year 2000**

The list below shows the type of data and number of observations received from the GTS.

<b><u>Data</u></b>	<b><u>Number of Observations</u></b>
Surface Marine	1,634,643
Buoy	3,156,945
Float	7,489
Bathy	34,330
TAO	83,330
TESAC	2,952
TRACKOB	84,608