#94028

U.S. GEOLOGICAL SURVEY-BRANCH OF ATLANTIC MARINE GEOLOGY
CRUISE REPORT

1. ***SHIP NAME (Parent vessel)/SUBMERSIBLE/OWNER-OPERATOR***
   : **RV Wecoma**

2. ***CRUISE # AND LEG:***
   94-06

3. ***PROJECT # AND NAME:***
   9470-61084 OBS Operations

4. ***FUNDING AGENCY:***
   NSF

5. ***CONTRACT (If applicable):***
   Oregon State Cooperative Agreement

6. ***AREA OF OPERATIONS:***
   Cape Mendocino

7. ***DATES AND PORTS OF CALL:***

Departure	**JUNE 8,1994**	**NEWPORT, OREGON**
Arrival	**JUNE 24, 1994**	**EUREKA, CALIFORNIA**

8. ***CHIEF SCIENTIST(S):***
   ANNE TREHU
   MITCH LYLE

9. *SCIENTIFIC PARTY (Names,affiliations,cruise duties):*

ANNE TREHU	OREGON STATE UNIVERSITY	Chief Scientist
BRIAN WENDLER	OREGON STATE UNIVERSITY	Marine Tech.
ROB BOWERS	OREGON STATE UNIVERSITY	Electrinic Tech.
PETE KALK	OREGON STATE UNIVERSITY	Mechanical Tech.
TIM HOLT	OREGON STATE UNIVERSITY	Computer Tech/Marine Tech
CHRISTOF LENDL	OREGON STATE UNIVERSITY	Watch Stander
MITCH LYLE	BOISE STATE UNIVERSITY	Chief Scientist
DAVE DUBOIS	WHOI	OBH Tech.
KEN PEAL	WHOI	OBH Tech.
BEECHER WOODING	WHOI	OBH Tech.
JIM DOLAN	WHOI	OBH Tech.
GREG MILLER	USGS - AMG	OBS Tech.
VEEANN CROSS	USGS - AMG	OBS Tech.

10. *SHIP'S CAPTAIN (and affiliation):*

Oregon State University

11. *PURPOSE OF CRUISE (brief statement)*

Study crustal structure and faults in an area of intense earthquake activity.

12. *NAVIGATION TECHNIQUES:*

GPS

13. *SCIENTIFIC EQUIPMENT:*

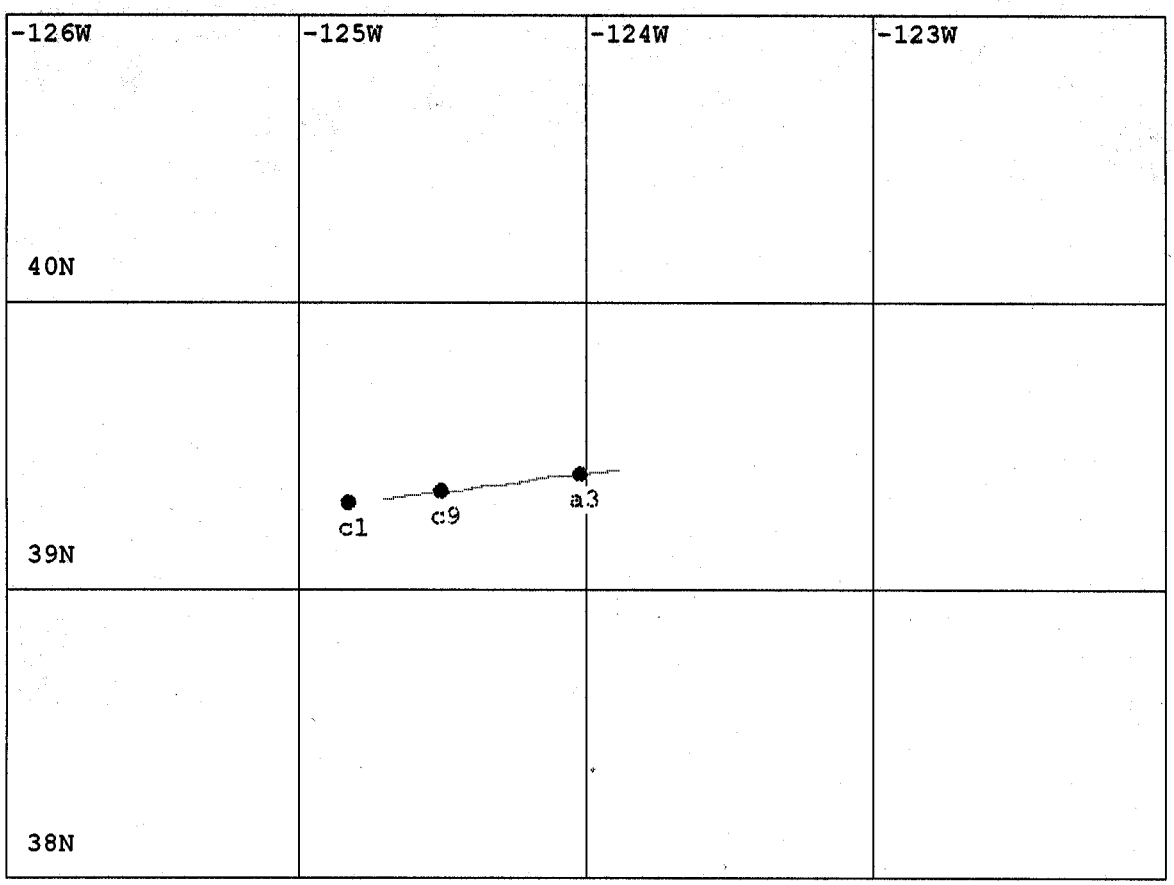
GPS
OCEAN BOTTOM HYDROPHONES (WHOI)
OCEAN BOTTOM SIESMOMETERS
S80 WATER & 2 CHANNEL STREAMER
MASSCOMP ACQUISTION SYSTEM

14. TABULATED INFORMATION:

Station number:	Date	Latitude	Longitude	depth	type	Remarks
1	6/10/94	39 16.8N	124 58.2W	3045	OBH	SEGY DATA
2	6/10/94	39 17.9N	124 49.3W	2825	OBS	SEGY DATA
3	6/10/94	39 19.3N	124 37.6W	3090	OBH	SEGY DATA
4	6/10/94	39 20.2N	124 30.0W	2350	OBS	SEGY DATA
5	6/10/94	39 21.1N	124 22.7W	1706	OBH	SEGY DATA
6	6/10/94	39 22.0N	124 15.2W	1223	OBS	SEGY DATA
7	6/10/94	39 22.9N	124 8.0W	825	OBH	SEGY DATA
8	6/10/94	39 23.8N	124 0.9W	495	OBS	SEGY DATA
9	6/10/94	39 24.7N	123 53.8W	105	OBH	SEGY DATA
10	6/11/94	39 40.6N	123 53.7W	115	OBS	SEGY DATA
11	6/11/94	39 38.1N	124 8.0W	995	OBH	SEGY DATA
12	6/12/94	39 30.9N	124 50.3W	2825	OBH	SEGY DATA
13	6/12/94	39 47.0N	125 10.0W	2953	OBH	SEGY DATA
14	6/12/94	40 0.0N	124 54.7W	1570	OBS	SEGY DATA
15	6/12/94	40 12.5N	124 38.6W	610	OBS	SEGY DATA
16	6/12/94	40 22.5N	124 28.0W	640	OBH	SEGY DATA
17	6/12/94	40 33.0N	124 42.0W	404	OBH	SEGY DATA
18	6/12/94	40 42.0N	124 55.0W	2360	OBS	SEGY DATA
19	6/16/94	39 57.8N	125 27.3W	2950	OBH	SEGY DATA
20	6/16/94	40 10.0N	125 28.2W	2375	OBS	SEGY DATA
21	6/16/94	40 18.4N	125 29.0W	1890	OBH	SEGY DATA
22	6/16/94	40 27.5N	125 29.7W	2810	OBH	SEGY DATA
23	6/16/94	40 35.0N	125 30.2W	2893	OBS	SEGY DATA
24	6/16/94	40 52.9N	125 15.2W	2990	OBH	SEGY DATA
25	6/16/94	40 55.1N	125 32.0W	3075	OBH	SEGY DATA
26	6/16/94	40 56.8N	125 45.0W	3131	OBS	SEGY DATA
27	6/17/94	41 15.5N	125 5.8W	3100	OBH	SEGY DATA
28	6/17/94	41 20.1N	124 47.8W	1085	OBS	SEGY DATA
29	6/17/94	41 24.8N	124 30.0W	345	OBH	SEGY DATA
30	6/19/94	41 22.3N	124 39.9W	1082	OBS	SEGY DATA
31	6/20/94	40 46.5N	124 29.2W	250	OBH	SEGY DATA
32	6/20/94	40 47.3N	124 35.8W	523	OBS	SEGY DATA
33	6/20/94	40 48.2N	124 42.7W	1079	OBH	SEGY DATA
34	6/20/94	40 49.5N	124 50.0W	2493	OBH	SEGY DATA
35	6/20/94	40 50.4N	6/20/94	2972	OBS	SEGY DATA

OBS SPHERE #	A-1	A-2	A-3	B-1	C-1	C-3	C-4	C-9
Station #	15	18	8	6	2	10	14	4
Battery Connection Time	6/12/94 6:07	6/12/94 6:52	6/10/94 21:47	6/10/94 19:43	6/9/94 19:14	6/11/94 1:32	6/12/94 4:42	6/9/94 20:13
Battery Disconnect	6/19/94 0:10	6/18/94 18:15	6/15/94 8:45	LOST	6/14/94 17:30	6/15/94 3:30	6/19/94 2:40	6/15/94 5:50
Main Battery Voltage								
Start								
volts = 24	24.67	24.73	24.57	25.05	25.11	24.57	24.95	23.98
volts = 12	12.07	12.01	12.02	12.47	12.21	12.01	12.39	11.84
volts = -12	-12.71	-12.64	-12.68	-12.82	-12.84	-12.77	-12.76	-12.23
End								
volts = 24	19.53	19.4	19.93		20.29	20.39	18.63	19.03
volts = 12	9.43	9.87	9.63		9.83	9.73	9.3	9.21
volts = -12	-11.1	-11.01	-11.24		-12.13	-11.44	-10.95	-10.72
Release Battery								
Start	12.85	12.46	12.41	13.02	12.87	12.62	12.61	12.86
End	12.51	12.14	12.34		12.43	12.21	12.42	12.32
Time-of-Day								
Start	6/12/94 6:24	6/12/94 7:07	6/10/94 22:00	6/10/94 20:01	6/9/94 19:34	6/11/94 1:51	6/12/94 5:03	6/9/94 20:40
offset (ms)	1.48	3.56	8.64	4.8	2.24	1.46	3.76	1.48
End	6/19/94 0:09	6/18/94 18:11	6/15/94 8:30		6/14/94 17:25	6/15/94 3:16	Prog lock	Osc. fell out
offset (ms)	-78.8	-66.6	-38.8		-65.6	-46.4	no test	no test
Deployment								
Time								
Water Depth (m)	610	2360	495	1223	2825	115	1570	2350
Latitude	40 13.383 N	40 42.00 N	39 23.85 N	39 21 59 N	39 17.8 N	39 40.6 N	40 00.033 N	39 20.2 N
Longitude	124 38.65 W	124 57.00 W	124 00.983 W	124 15 12 W	124 49.283 W	123 53.667 W	124 54.667 W	124 30.067 W
Navigation	GPS	GPS	GPS	GPS	GPS	GPS	GPS	GPS
Recovery								
Time	6/18/94 23:29	6/18/94 17:04			6/14/94 16:06	6/15/94 2:40	6/19/94 1:42	6/15/94 16:28
Latitude	40 13.402 N	40 42.05 N	39 23.67 N	LOST	39 17.47 N	39 40.58 N	40 00.038 N	39 20.09 N
Longitude	124 38.703 W	124 56.817 W	124 00.83 W		124 49.145 W	123 53.62 W	124 54.766 W	124 30.116 W
Navigation	GPS	GPS	GPS	GPS	GPS	GPS	GPS	GPS
offset (m)	83	271	424			61	142	229
range (m)	666.9	2538.2	596.6		2906.8	141.6	1592.3	2365.5
Tracks written	126	118	131		131	no data	129	131
Track Errors	0	0	0		0	Bad start???	0	0
Total Time drift (ms) foward	80.28	70.16	47.44	4.8	67.84	47.86	#VALUE!	#VALUE!
Estimated drift (ms)							81.6	70.6
Battery drain								
volts = 24	5.14	5.33	4.64	25.05	4.82	4.18	6.32	4.95
volts = 12	2.64	2.14	2.39	12.47	2.38	2.28	3.09	2.63
volts = -12	-1.61	-1.63	-1.44	-12.82	-0.71	-1.33	-1.81	-1.51
Release	0.34	0.32	0.07	13.02	0.44	0.41	0.19	0.54

OBS SPHERE #	A-1	A-2	A-3		C-1	C-3	C-4	C-9
Station #	32	35	26		23	20	30	28
Battery Connection Time	6/20/94 4:02	6/20/94 4:41	6/16/94 4:45		6/16/94 4:00	6/16/94 2:41	6/19/94 0:00	6/17/94 15:08
Battery Disconnect	6/23/94 23:59	6/24/94 4:40	6/22/94 14:30		6/22/94 21:45	6/23/94 4:00	6/21/94 0:24	6/20/94 21:56
Main Battery Voltage								
Start								
volts = 24	24.59	24.91	24.59		25.01	24.41	25.08	24.07
volts = 12	12.06	12.44	12.03		12.17	11.85	12.46	11.89
volts = -12	-12.82	-12.65	-12.75		-12.74	-12.61	-12.72	-12.53
End								
volts = 24	20.14	19.8	19.17		19.68	18.26	21.39	19.45
volts = 12	9.77	9.84	9.3		9.55	8.53	10.5	9.52
volts = -12	-11.49	-11.14	-11.15		-11.93	-10.79	-10.68	-11.14
Release Battery								
Start	12.42	12.36	12.38		12.9	12.8	12.38	12.61
End	11.99	11.49	11.87		12.44	12.15	11.9	11.91
Time-of-Day								
Start	6/20/94 4:18	6/20/94 4:47	6/16/94 5:03		6/16/94 4:19	6/16/94 2:52	6/19/94 7:18	6/17/94 15:23
offset (ms)	8.24	0.528	2.6		3.96	6	5.84	7.84
End	Prog. error	Prog. error	6/22/94 14:22		Prog. error	Prog. error	no data	locked up
offset (ms)	no test	no test	-67.6		no test	no test	no test	no test
Deployment								
Time								
Water Depth (m)	523	2972	3131		2893	2375	1082	1085
Latitude	40 47.3 N	40 ~~70.783~~ N	40 56.717 N		40 34.95 N	40 9.667 N	41 22.3 N	41 20.067 N
Longitude	124 35.783 W	124 59.967 W	125 44.75 W		125 30.15 W	125 28.2 W	124 39.183 W	124 47.75 W
Navigation	GPS	GPS	GPS		GPS	GPS	GPS	GPS
Recovery								
Time	6/23/94 23:49	6/24/94 4:11	6/22/94 12:28		6/22/94 20:34	6/23/94 2:40	6/20/94 22:12	6/20/94 20:58
Latitude	40 47.316 N	40 50.773 N	40 56.756 N		40 35.025 N	40 10.055 N	41 22.32 N	41 20.148 N
Longitude	124 35.856 W	125 00.150 W	125 45.015 W		125 30.236 W	125 28.13 W	124 39.945 W	124 47.684 W
Navigation	GPS	GPS	GPS		GPS	GPS	GPS	GPS
offset (m)	109	125	378		184	191	94	177
range (m)	547	3011.7	3121		2900.7	2381.1	1084	1102.5
Tracks written	208	208	123		208	208	No DATA	149
Track Errors	0	0	0		0	0		0
Total Time drift (ms) foward	#VALUE!	#VALUE!	70.2	0	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Estimated drift (ms)	45.1	44.2			90.2	83.02		38.71
Battery drain								
volts = 24	4.45	5.11	5.42	0	5.33	6.15	3.69	4.62
volts = 12	2.29	2.6	2.73	0	2.62	3.32	1.96	2.37
volts = -12	-1.33	-1.51	-1.6	0	-0.81	-1.82	-2.04	-1.39
Release	0.43	0.87	0.51	0	0.46	0.65	0.48	0.7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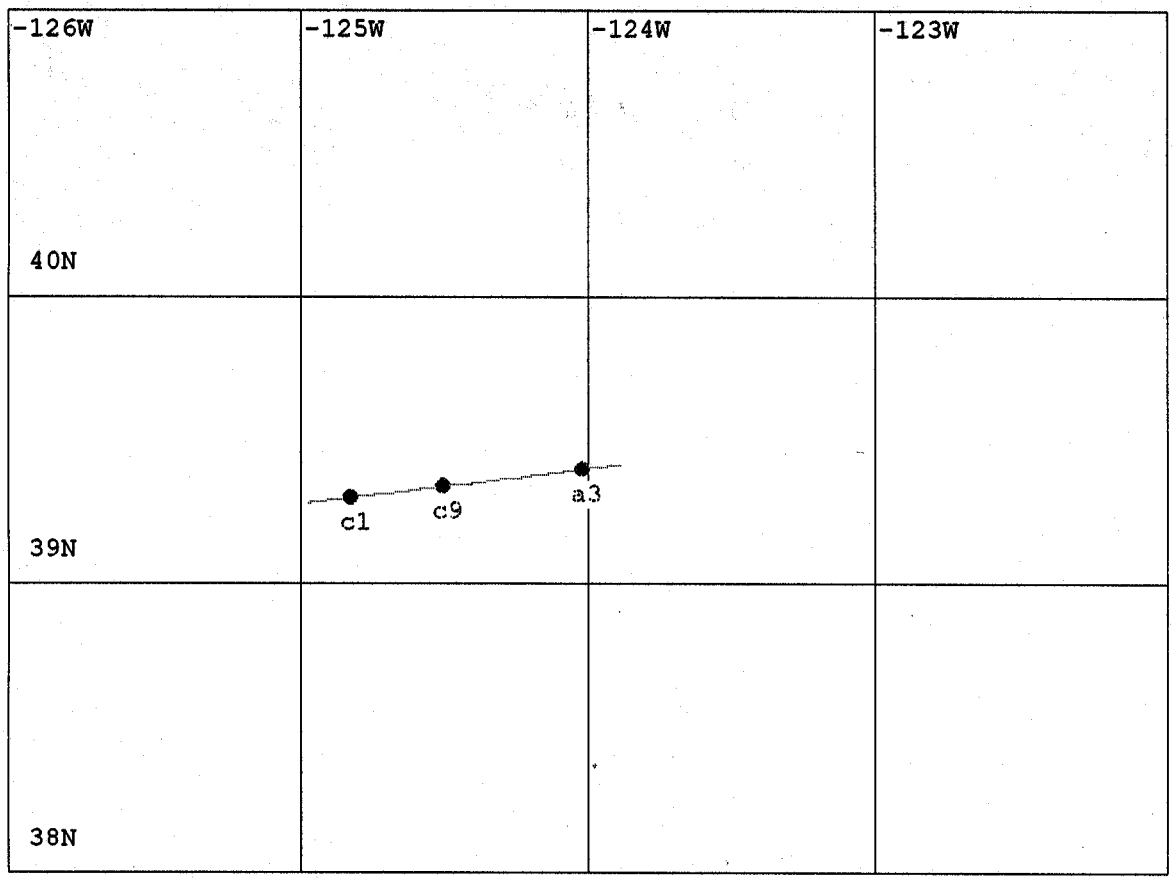
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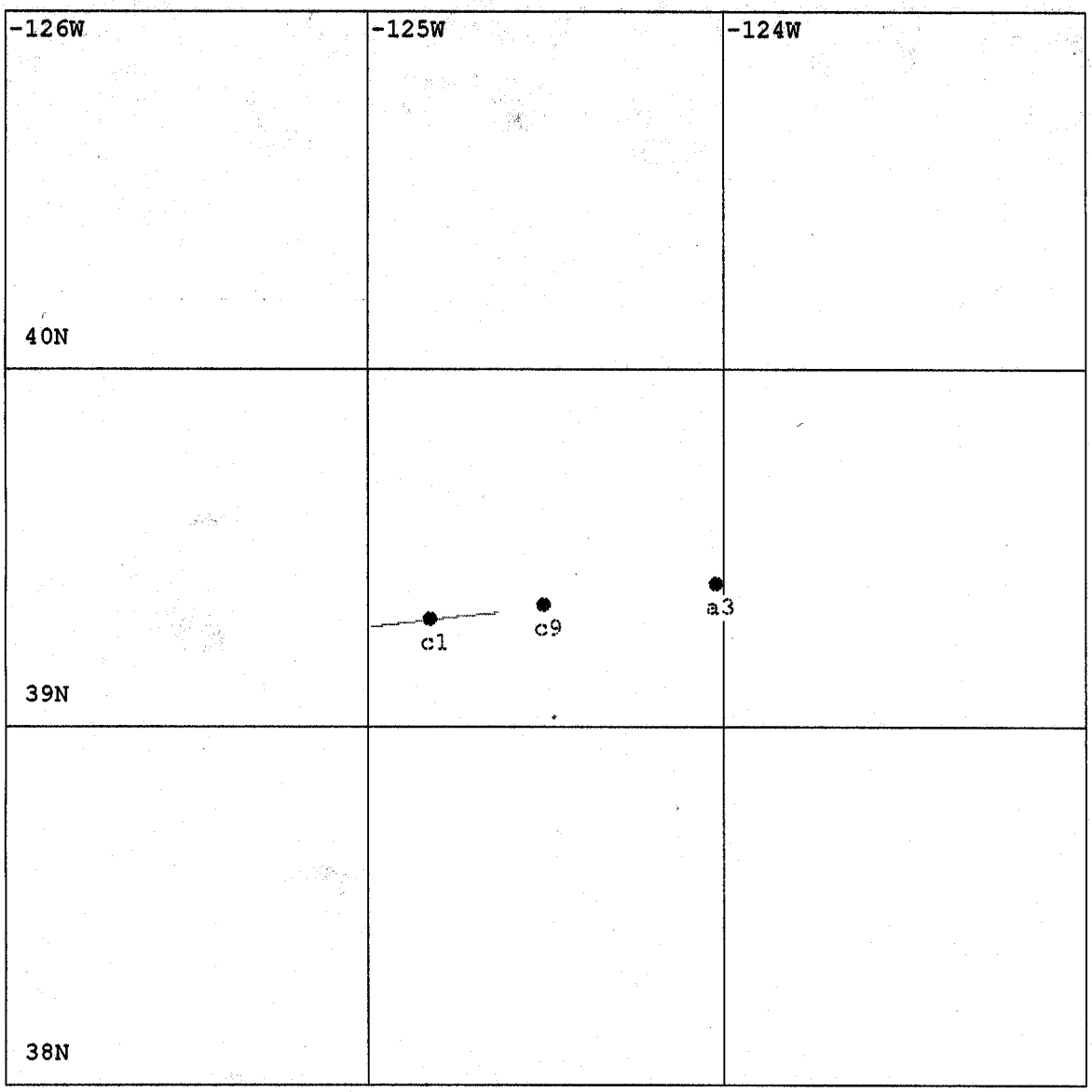
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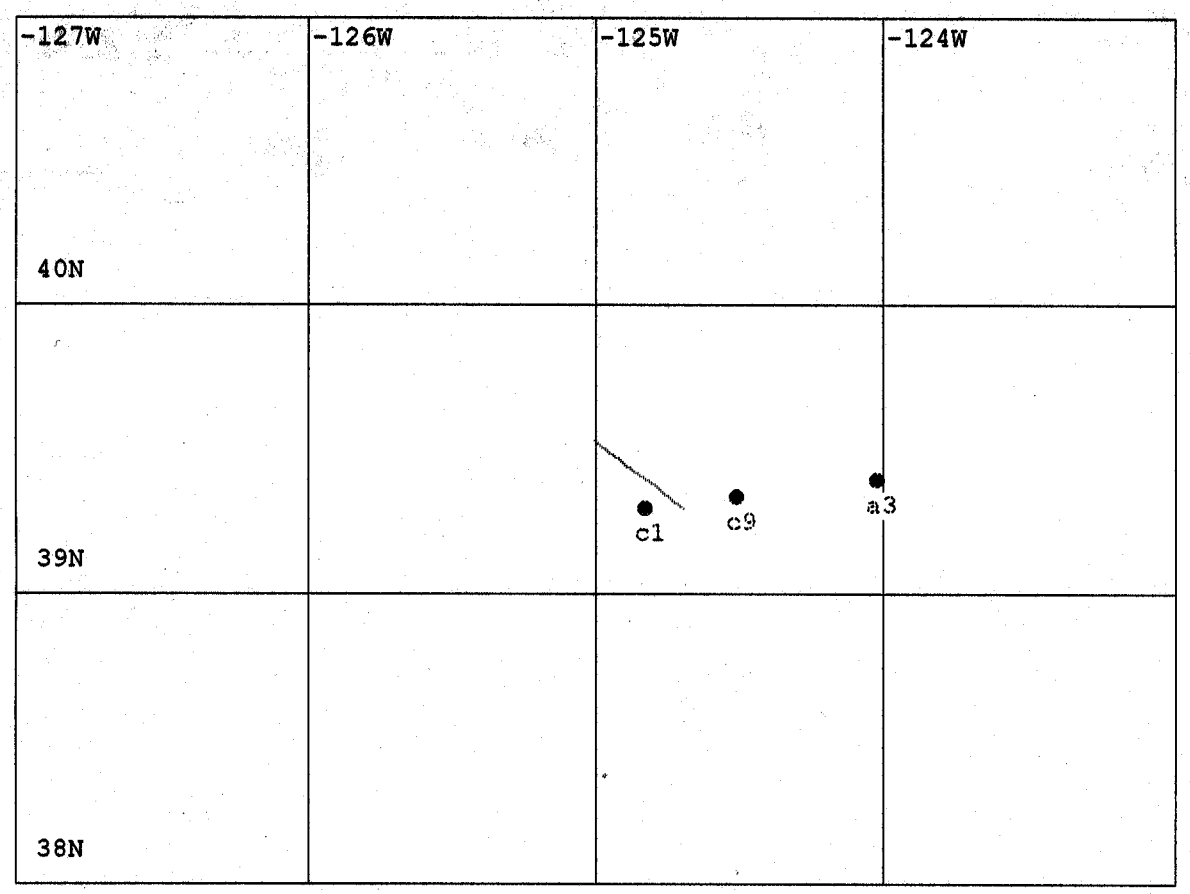
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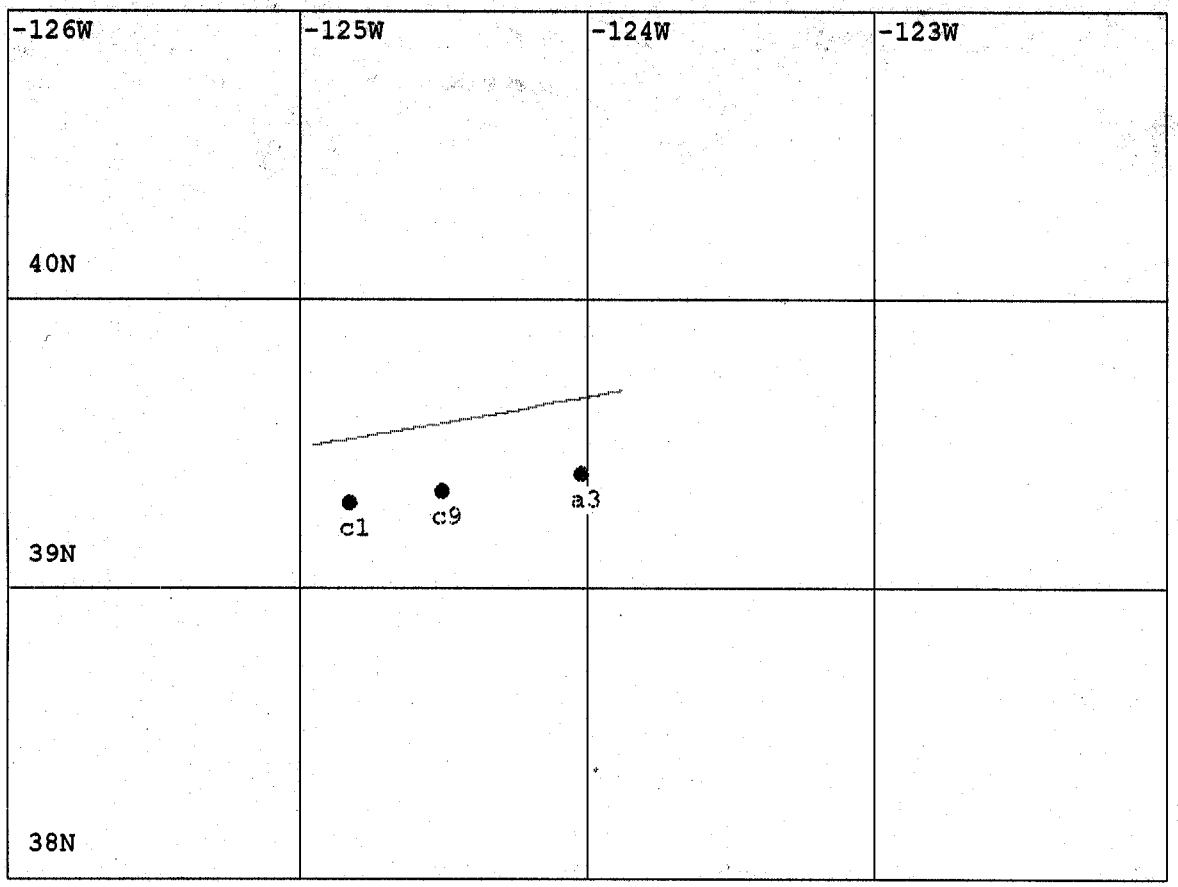
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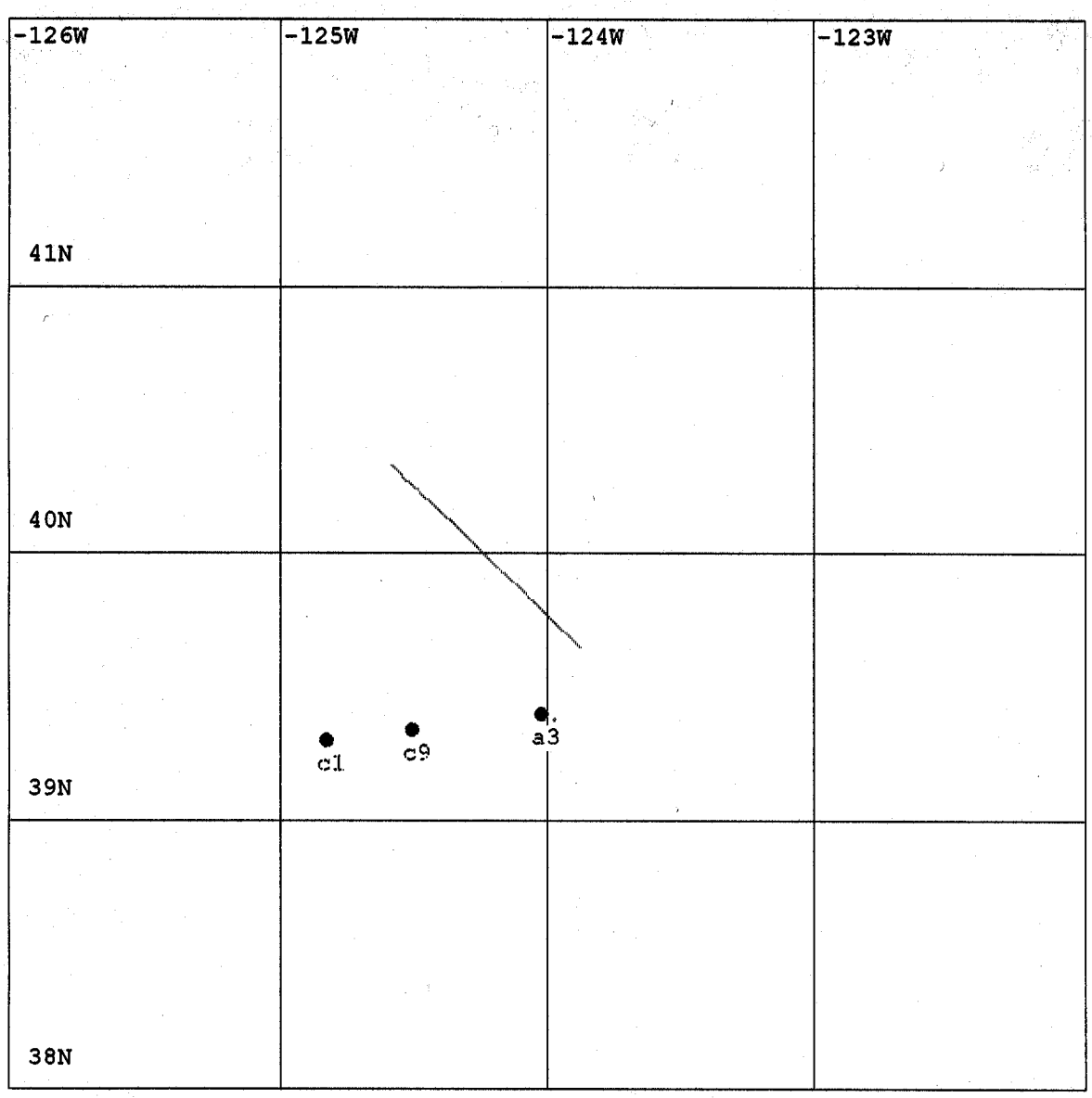
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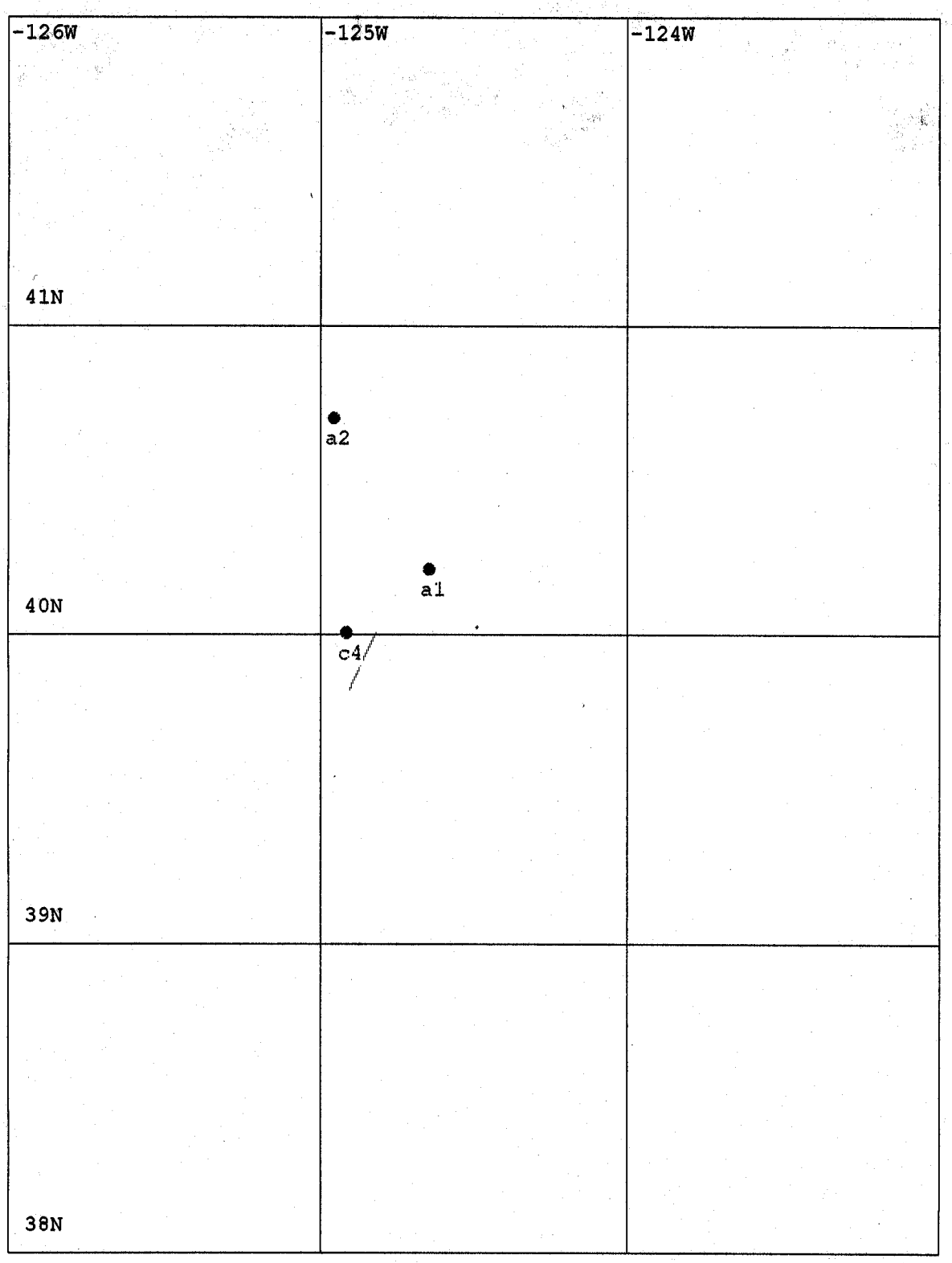
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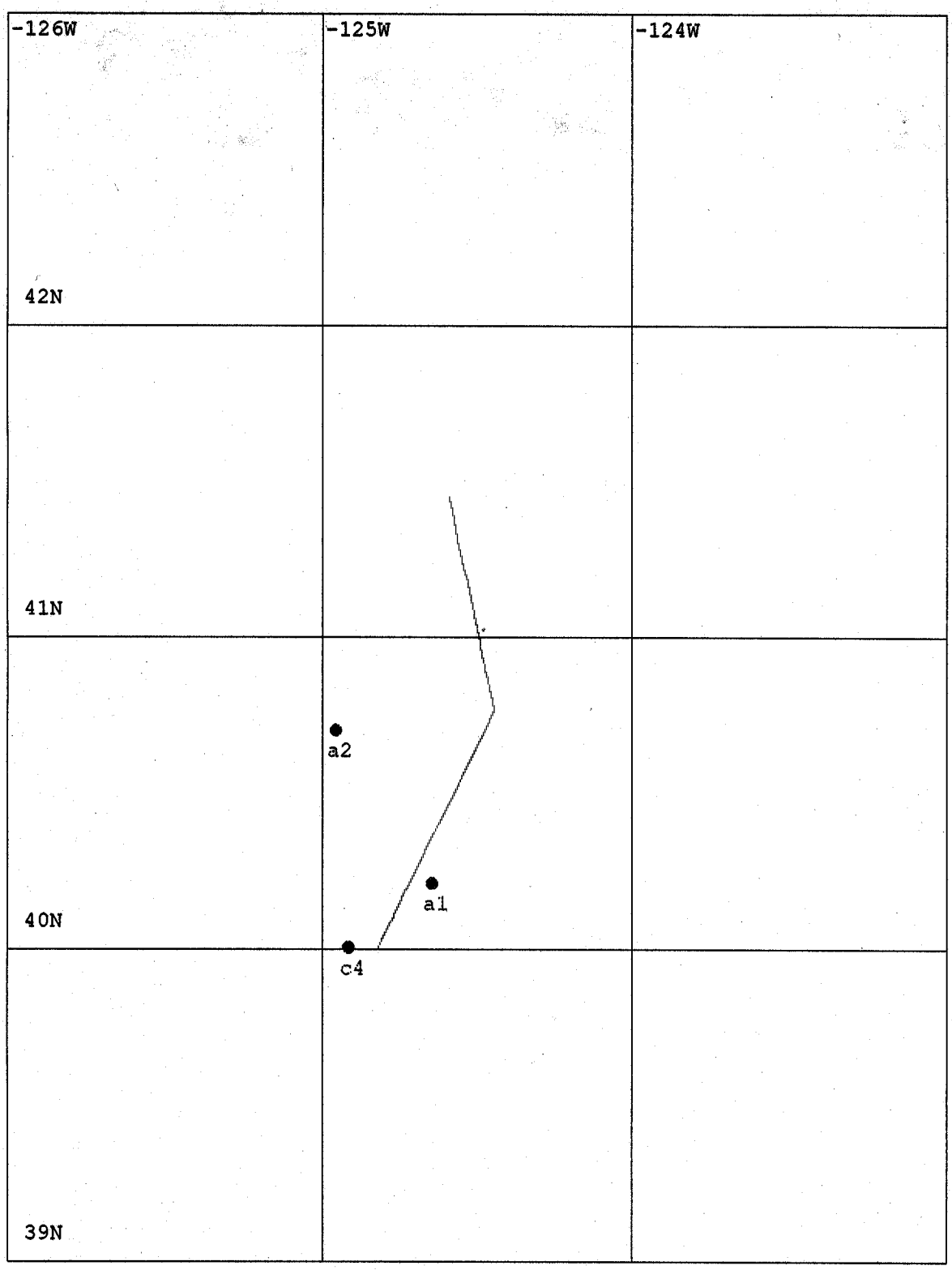
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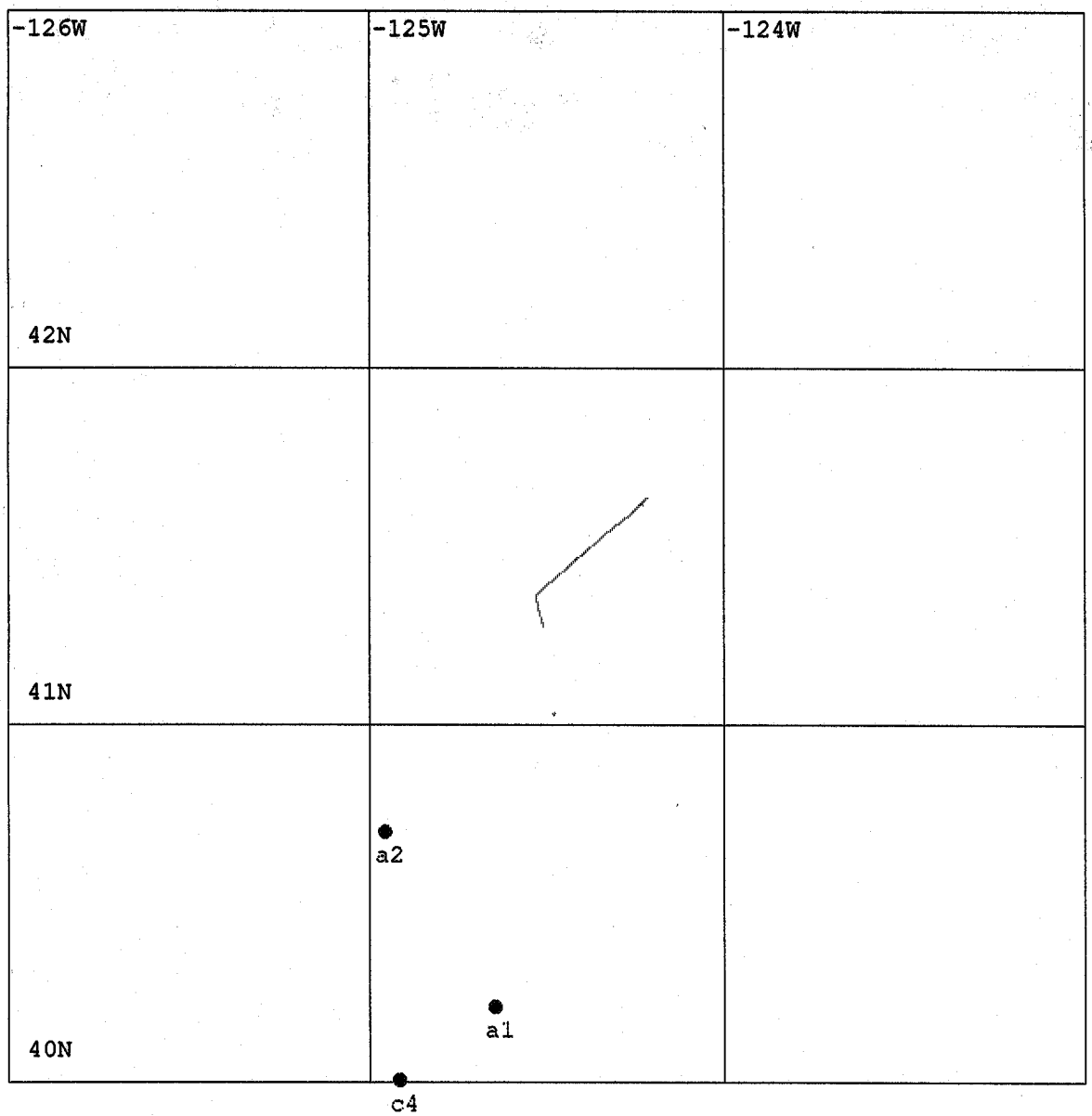
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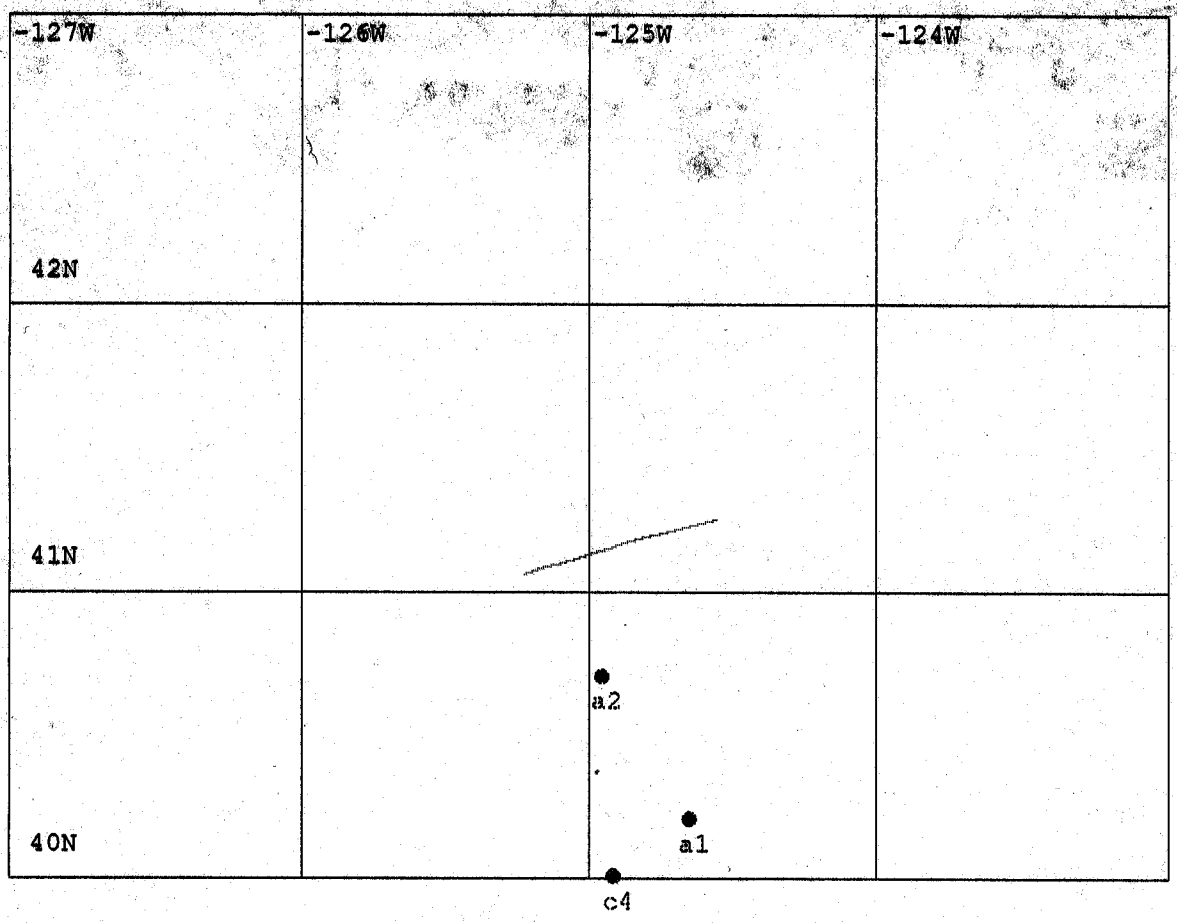
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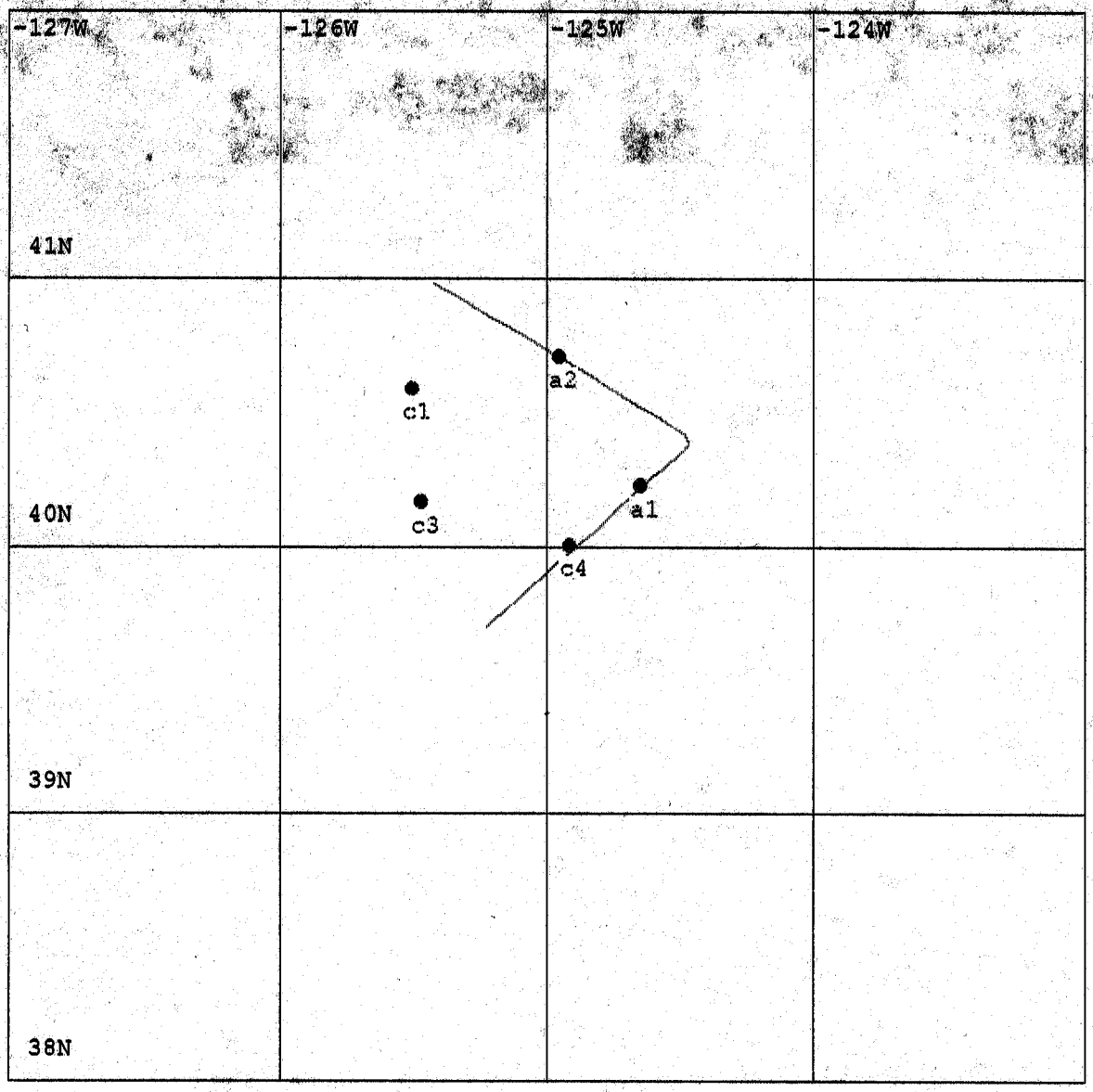
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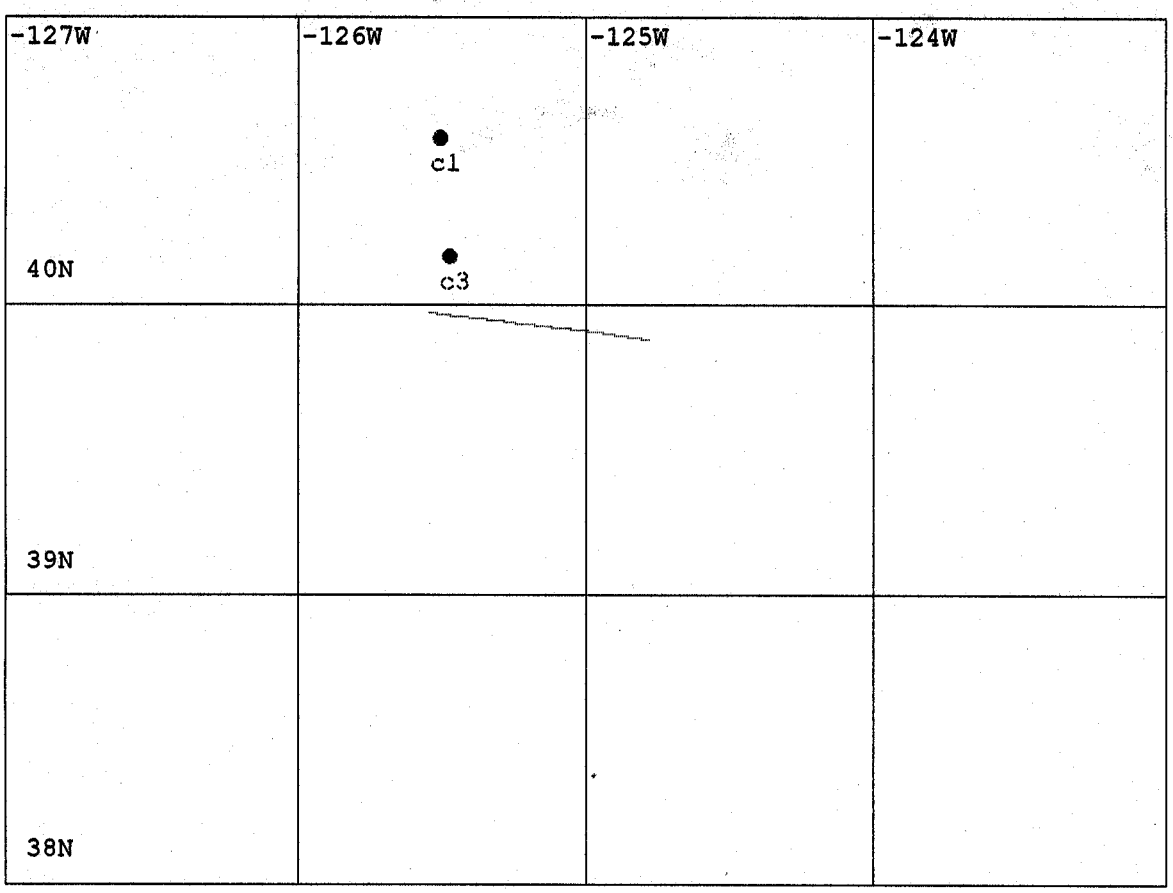
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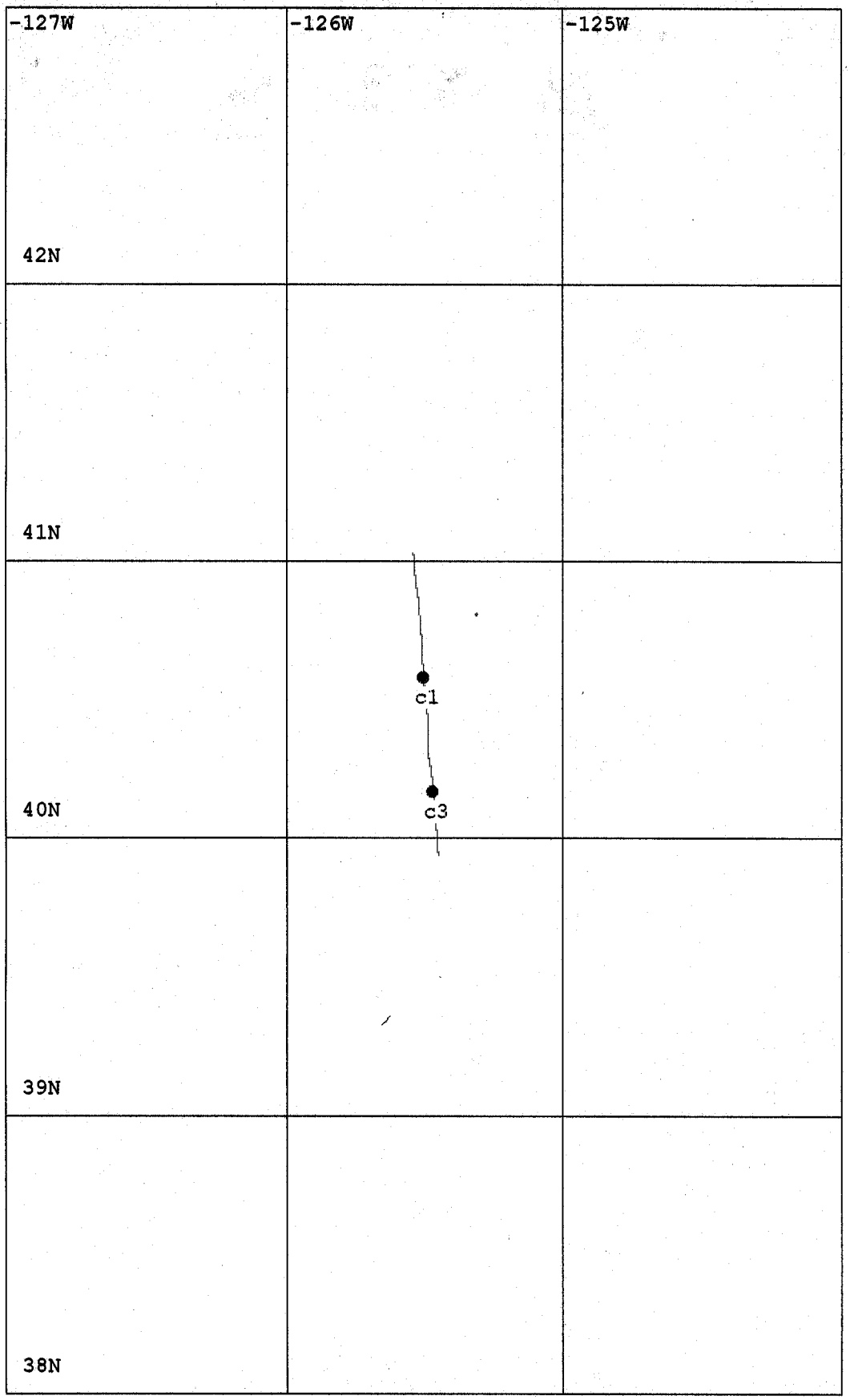
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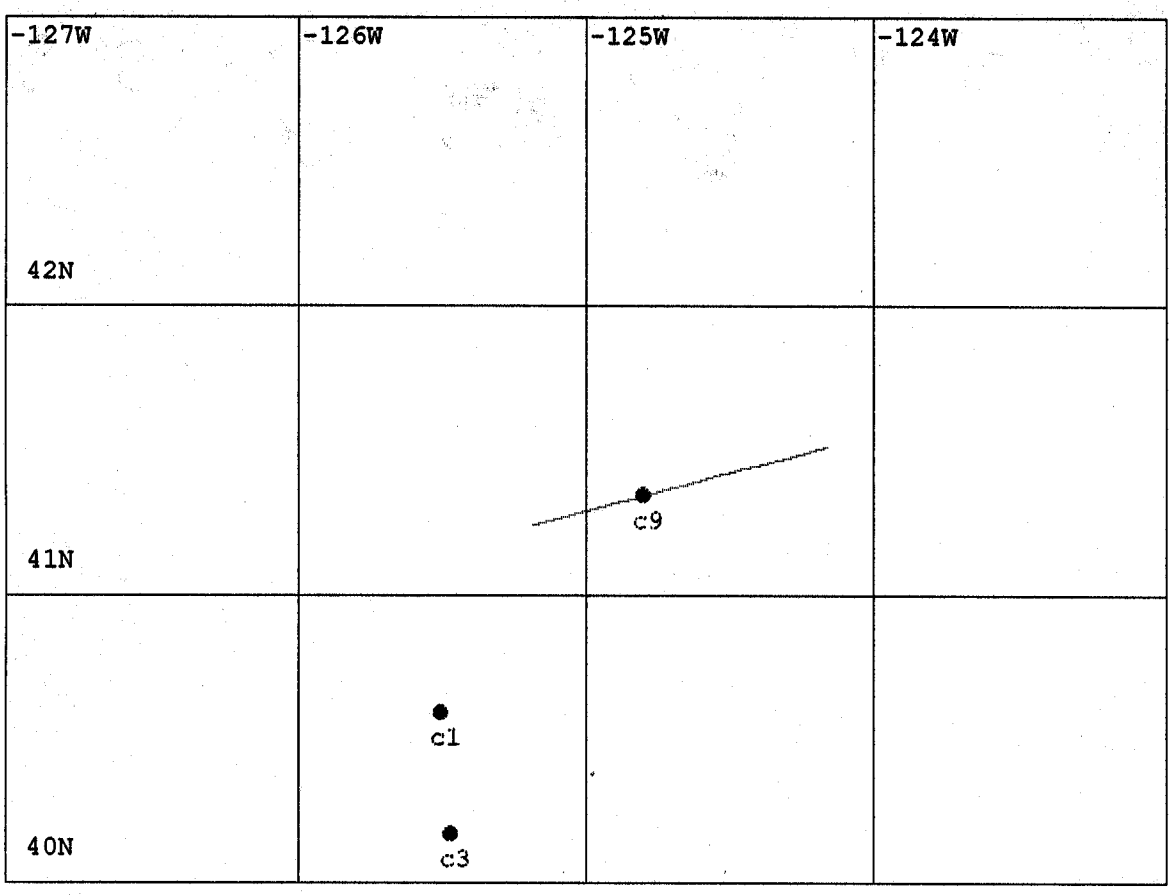
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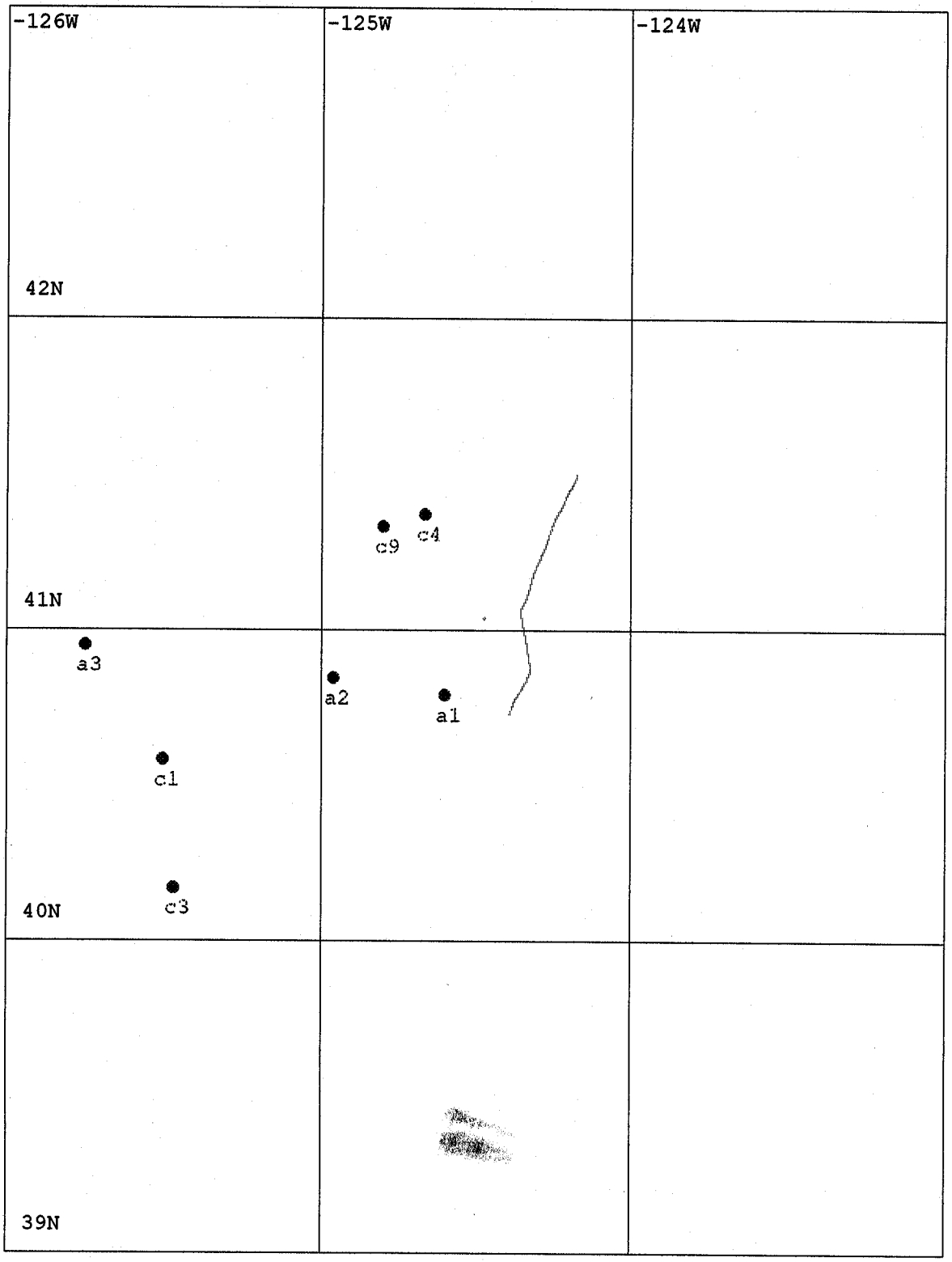
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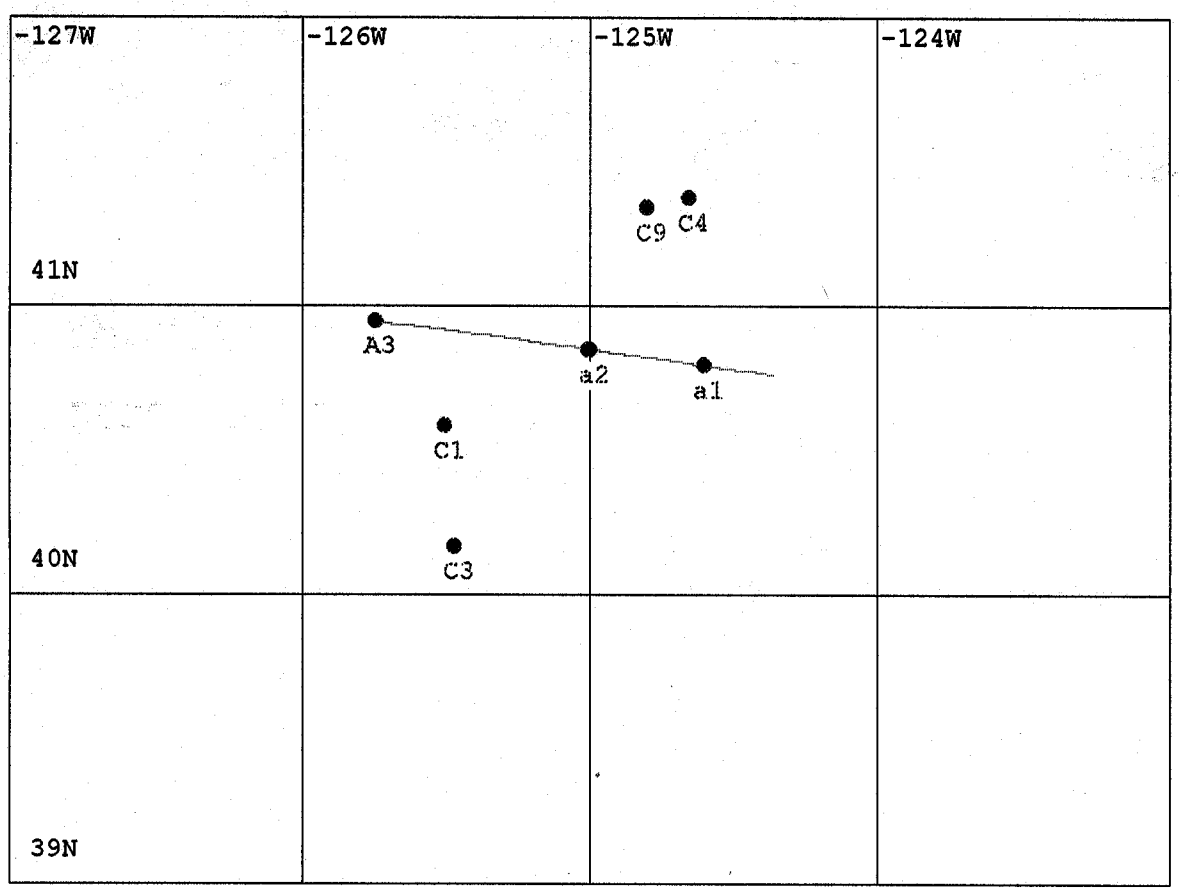
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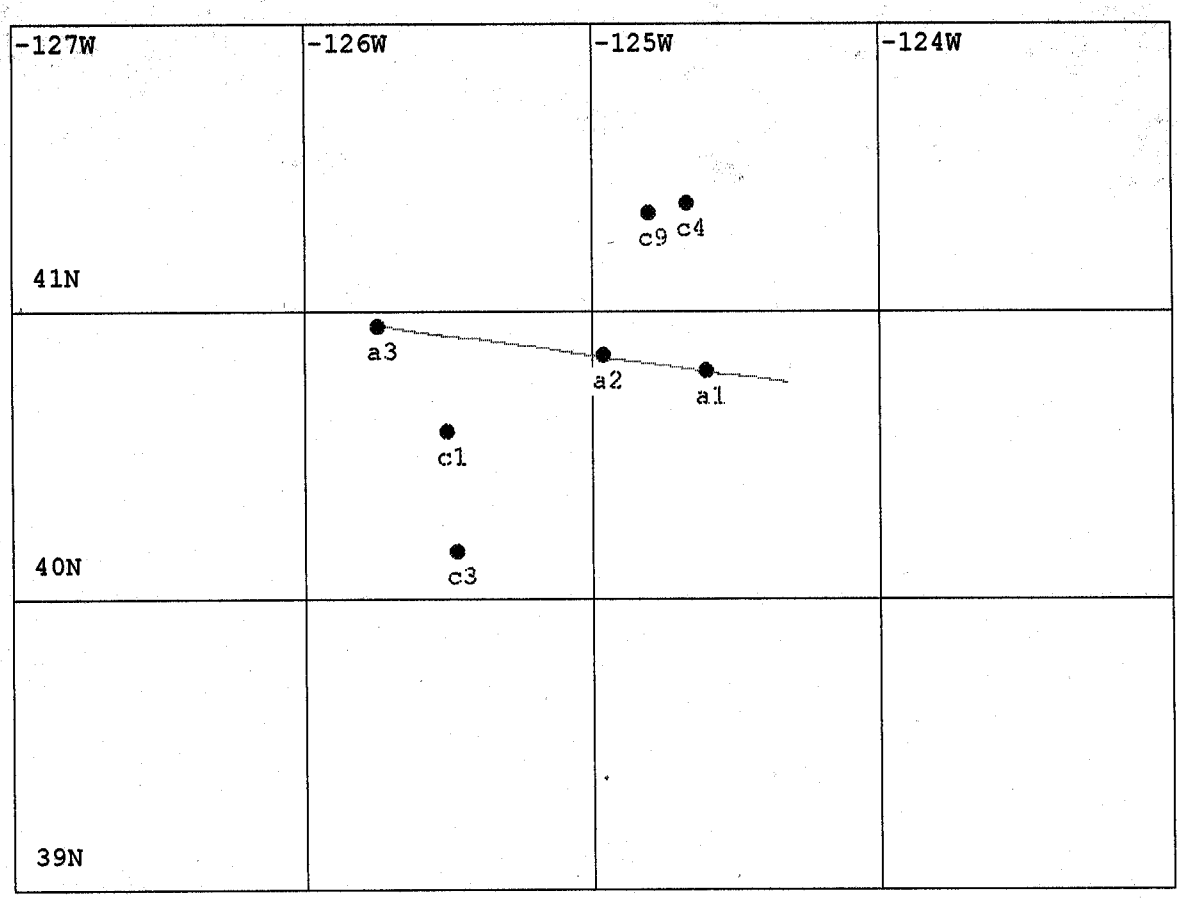
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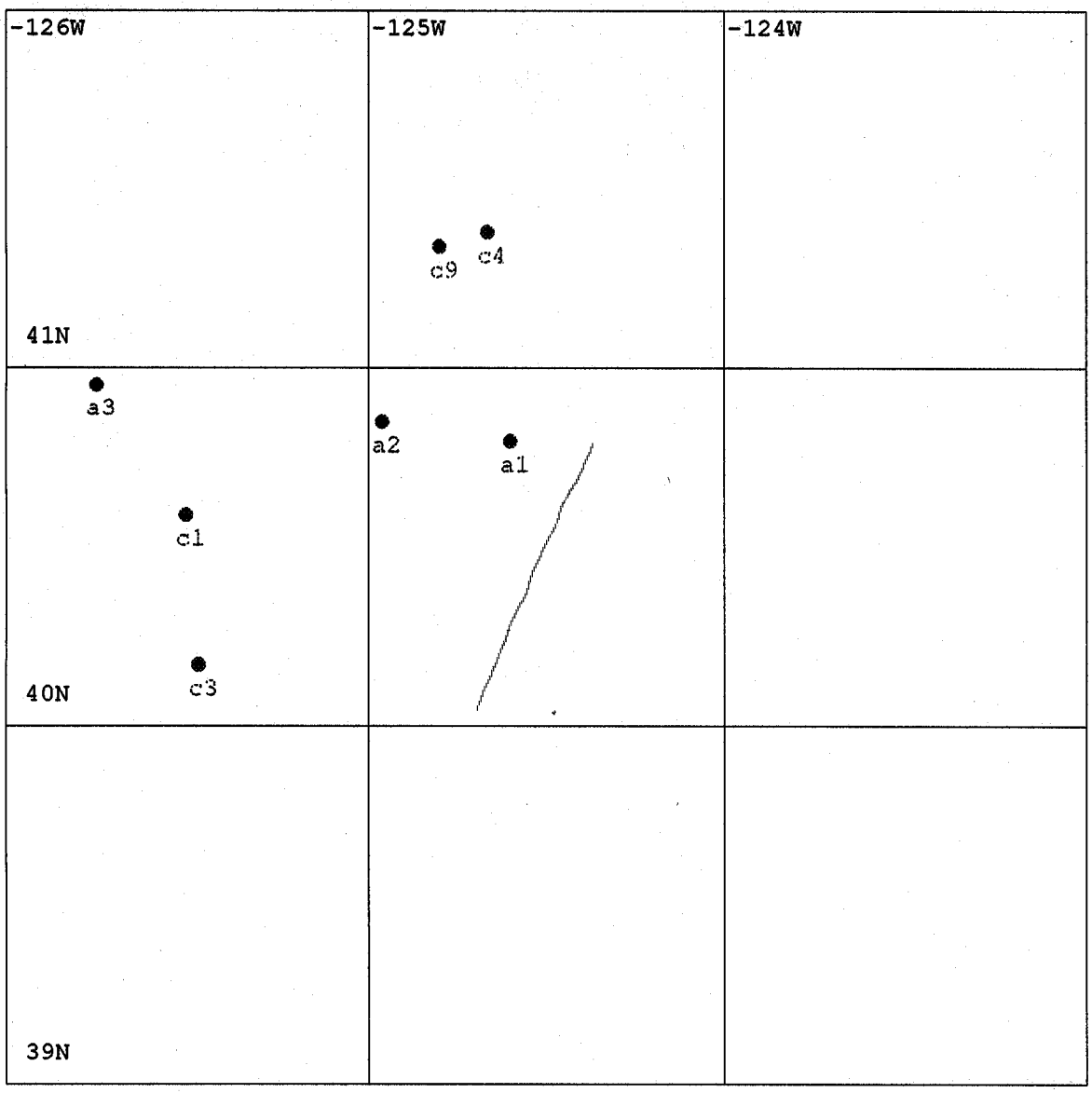
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