



US Army Corps
of Engineers

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TECHNICAL REPORT CERC-89-17

2

LOS ANGELES AND LONG BEACH HARBORS MODEL ENHANCEMENT PROGRAM

TIDAL CIRCULATION PROTOTYPE DATA COLLECTION EFFORT

Volume II

APPENDIXES D THROUGH I

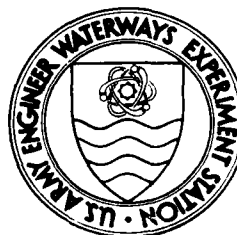
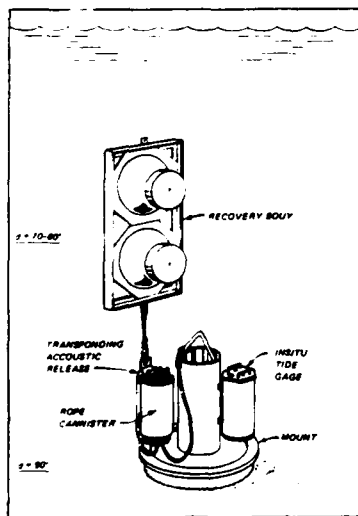
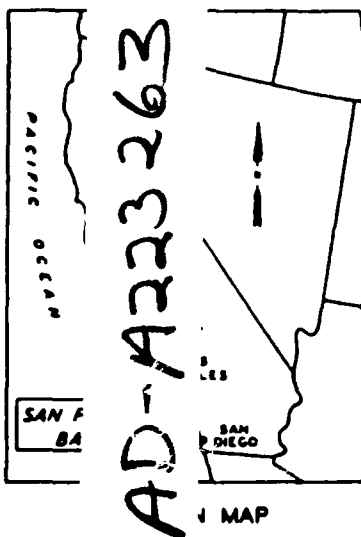
by

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Coastal Engineering Research Center

DEPARTMENT OF THE ARMY

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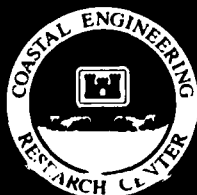
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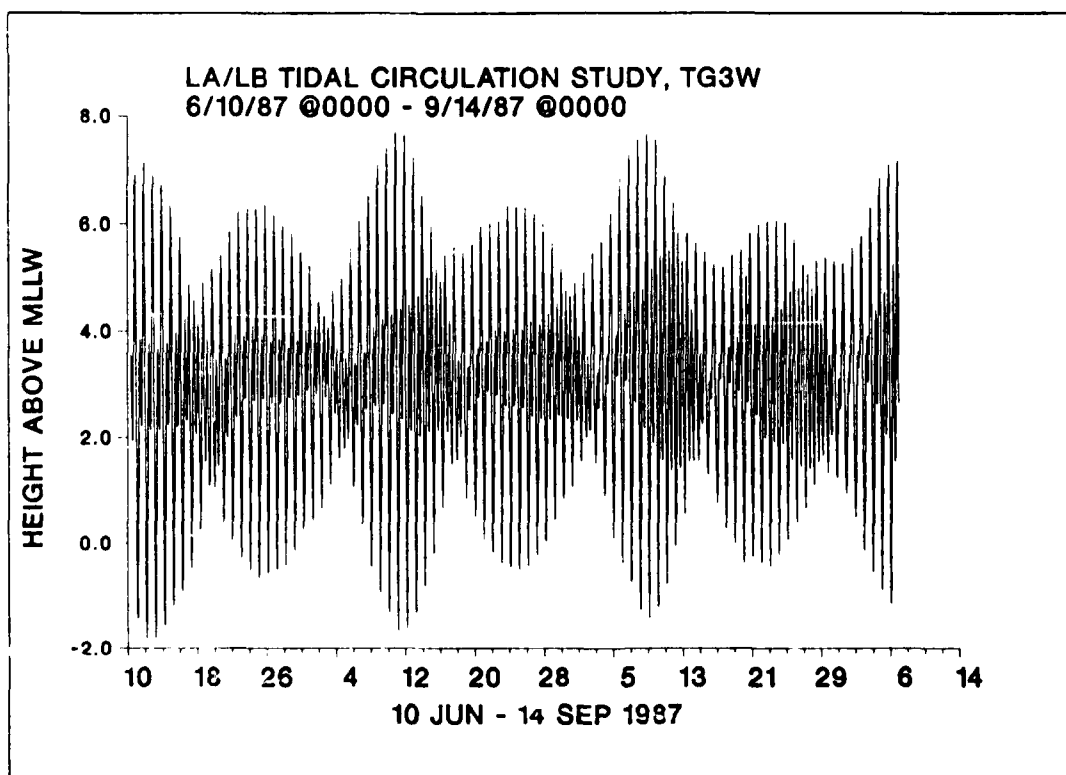
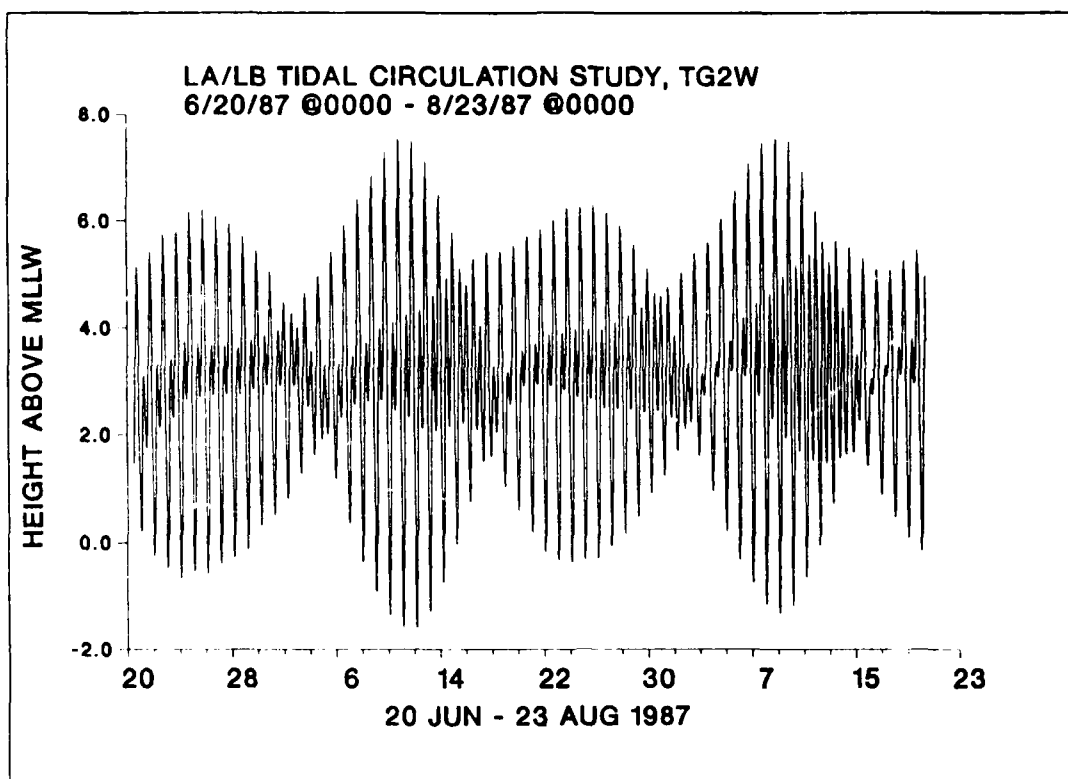
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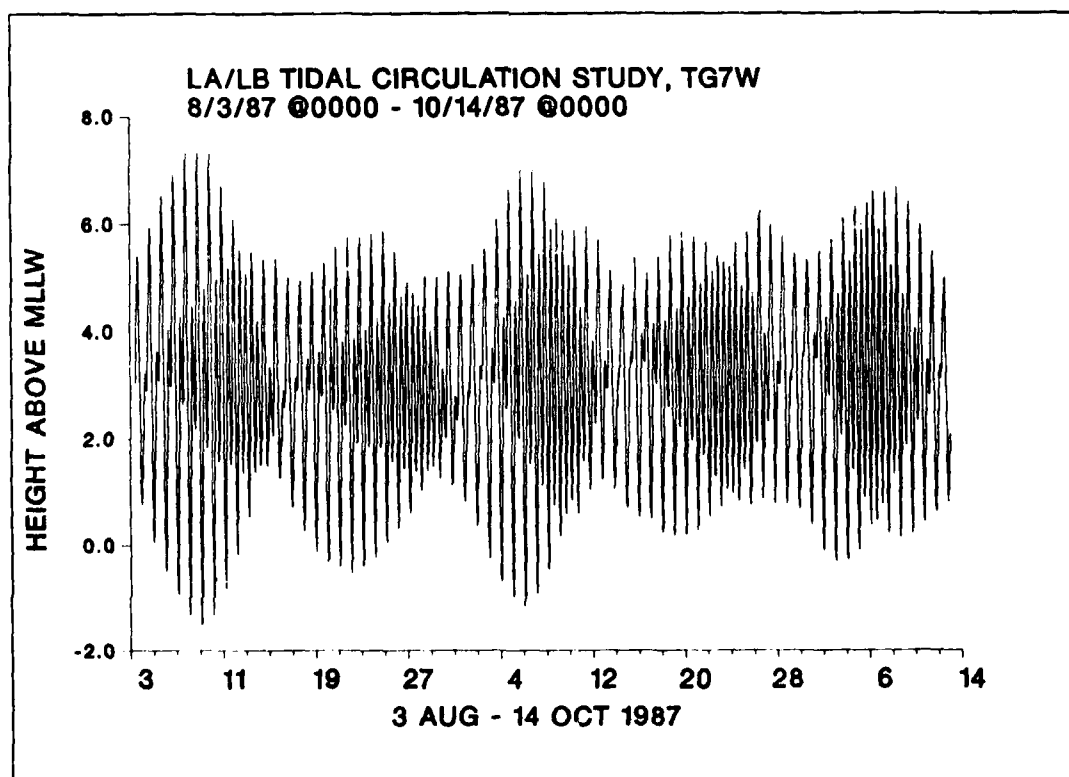
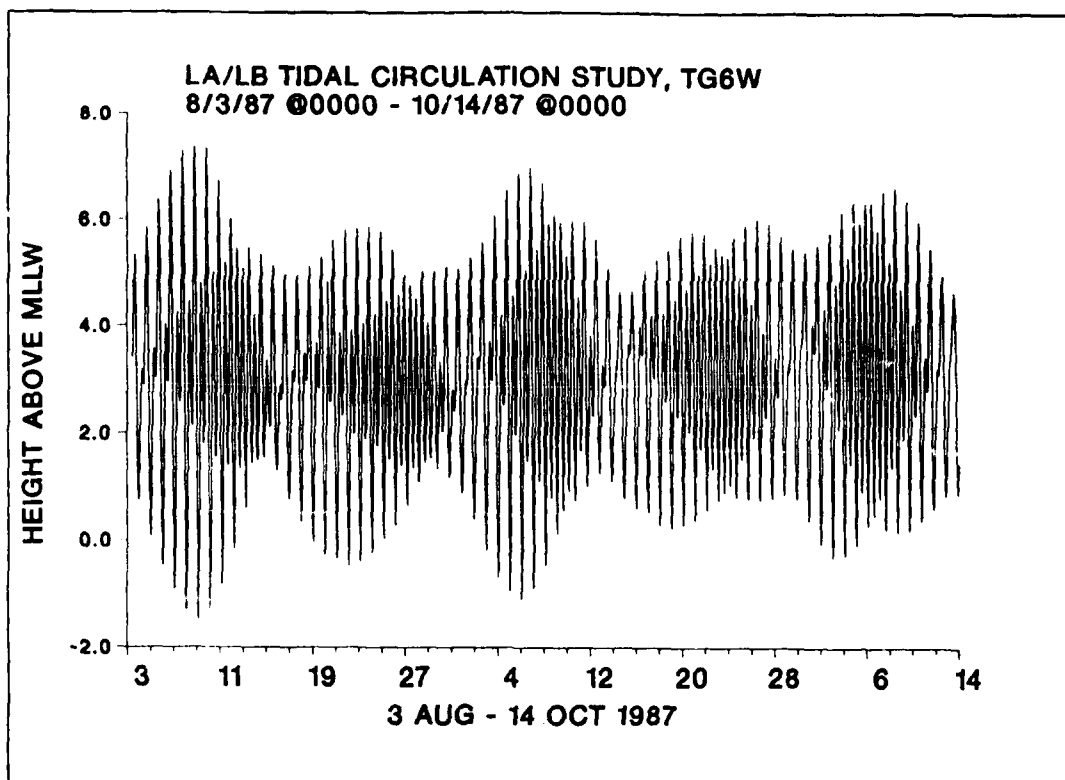
APPENDIX D: TIDAL ELEVATION TIME SERIES PLOTS

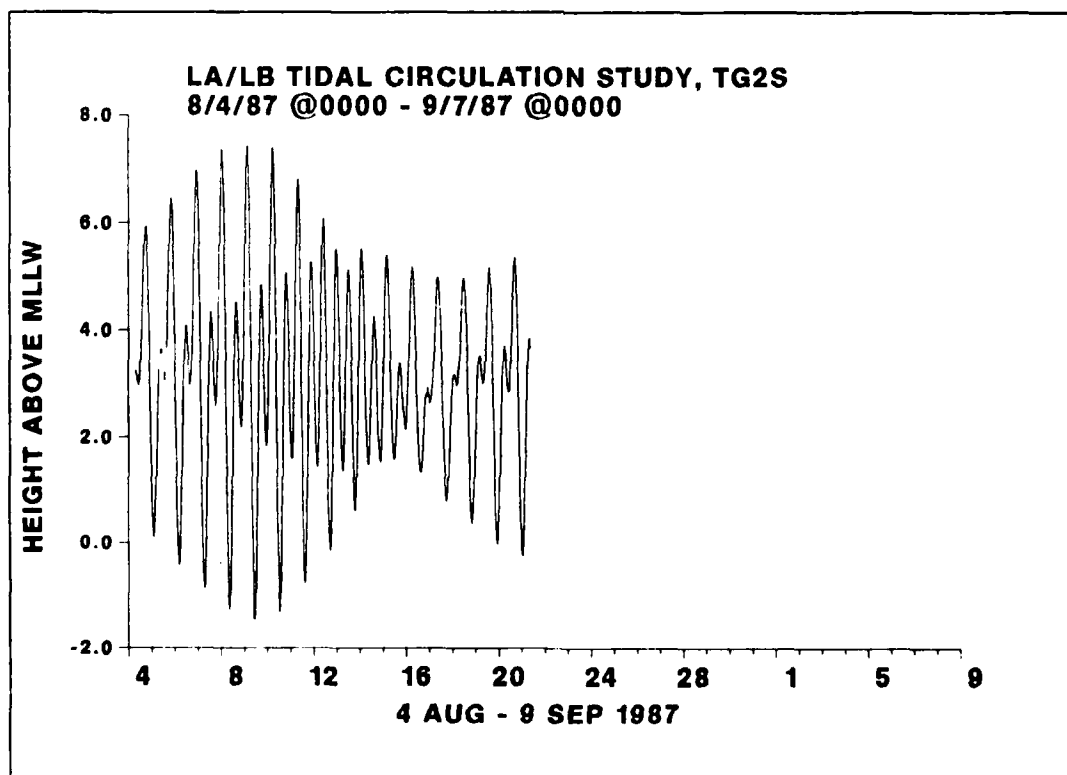
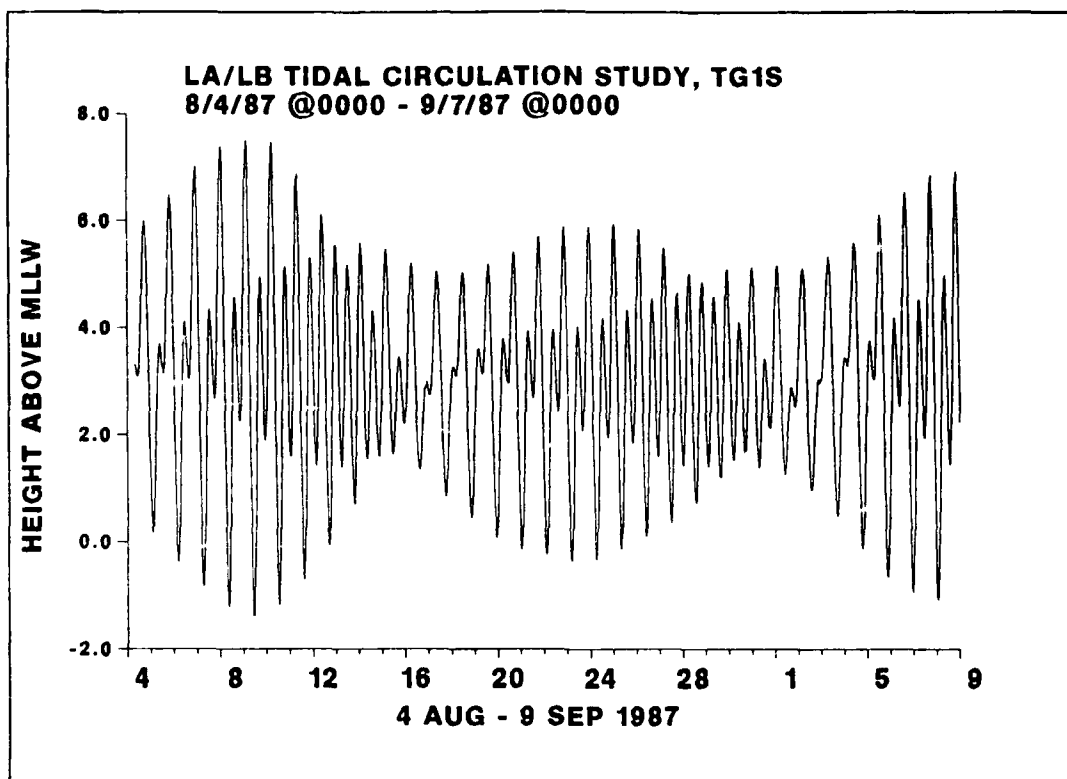
This appendix contains plots of tidal elevation time series. Primary station time series are denoted by TG*. Secondary station time series are denoted by LA* or LB*.

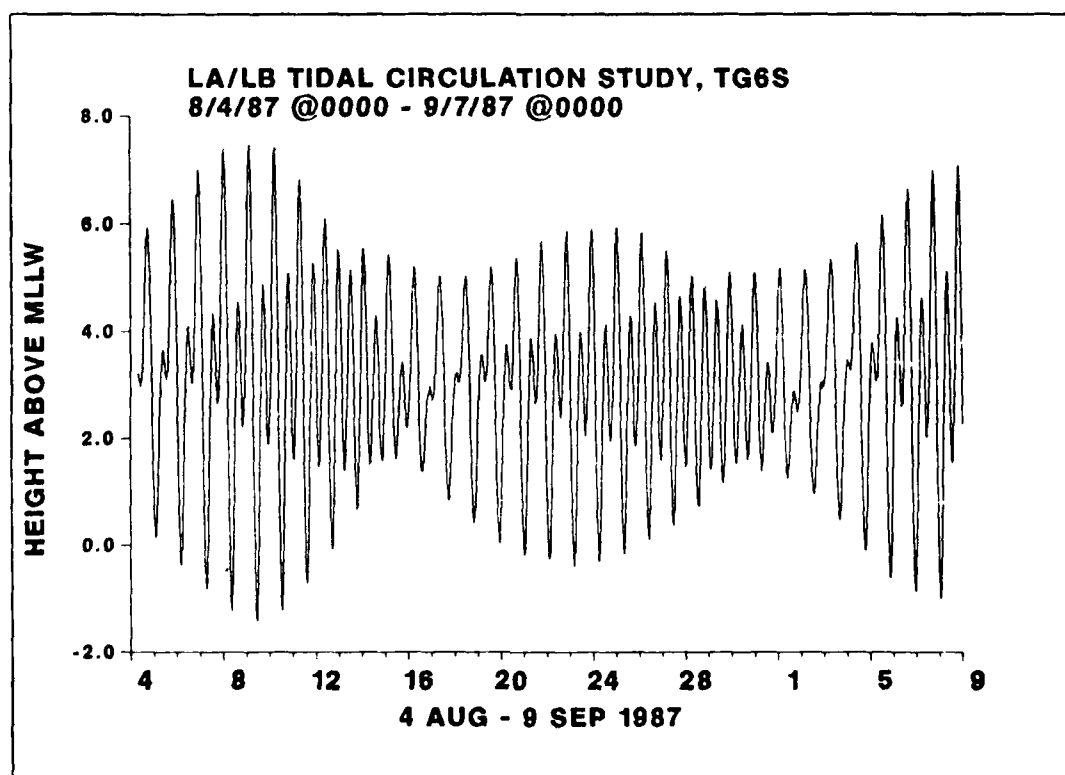
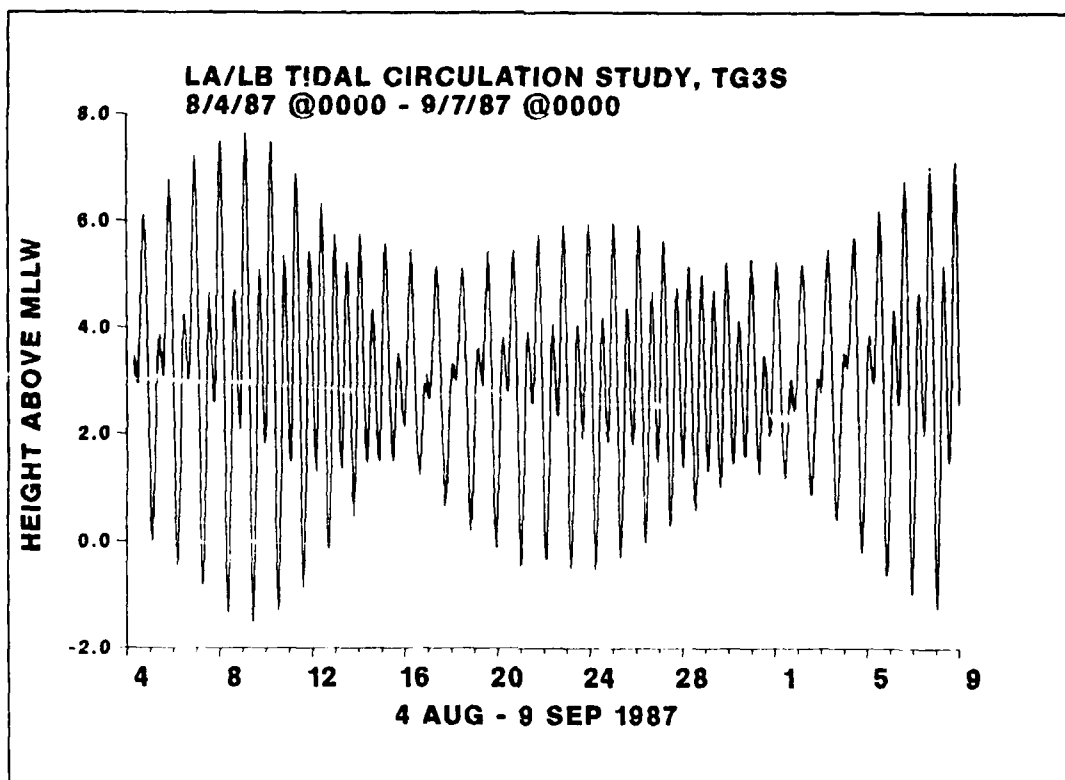


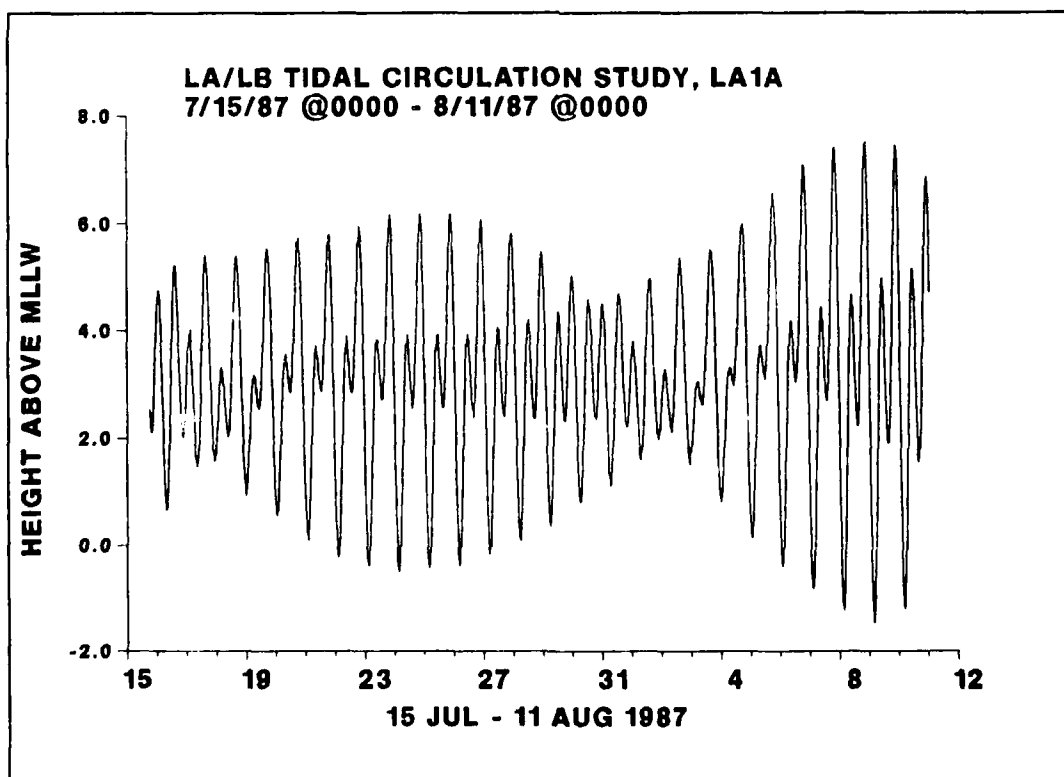
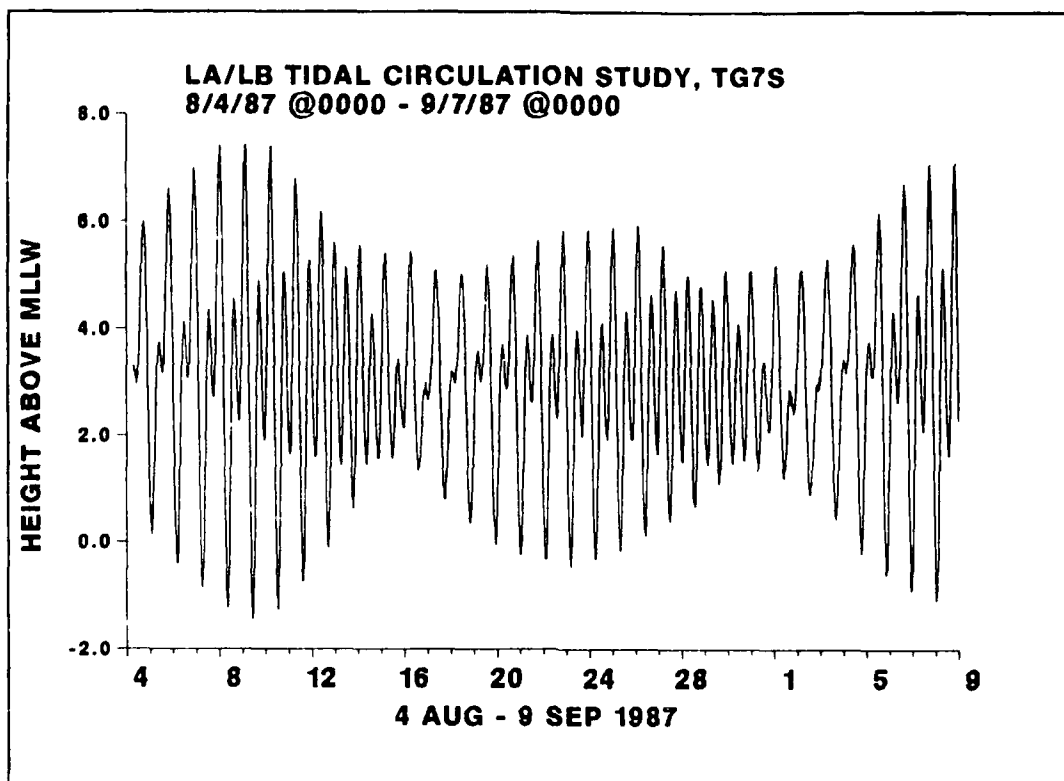
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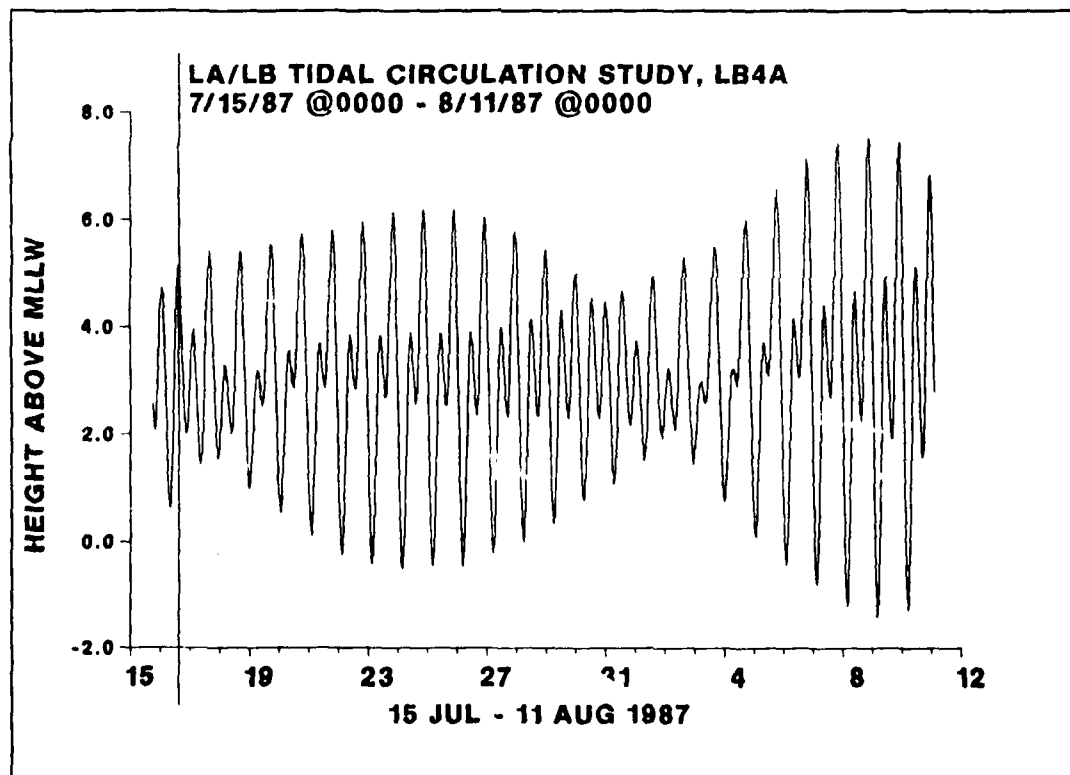
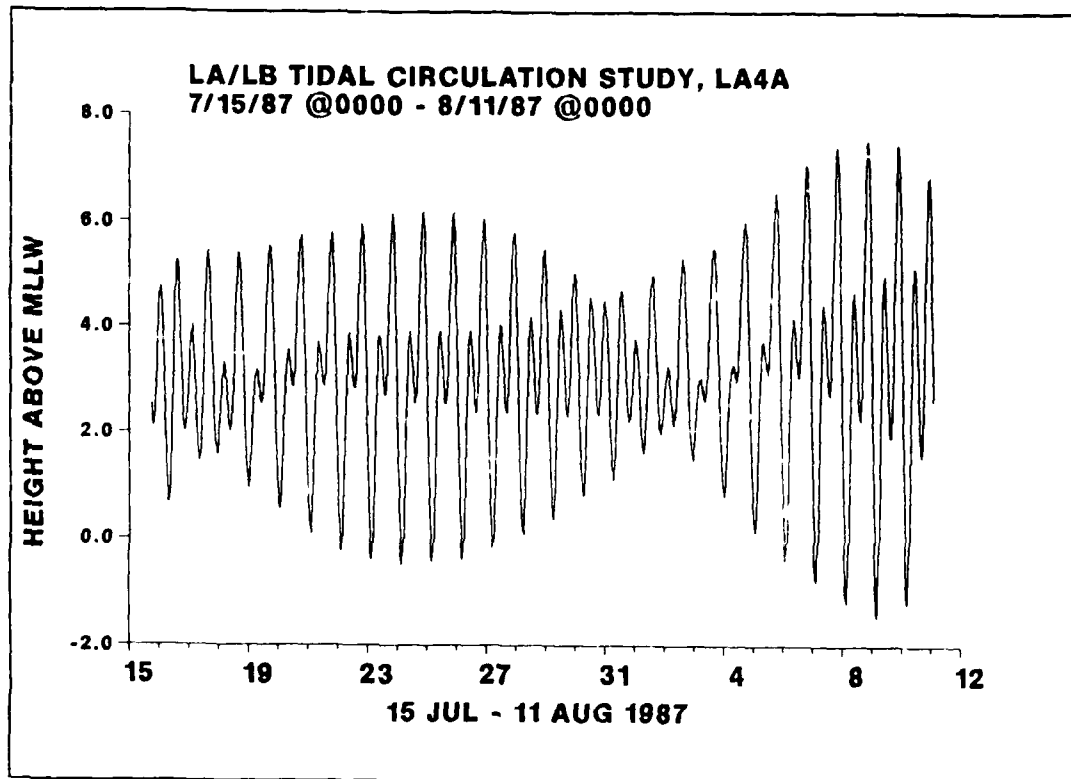


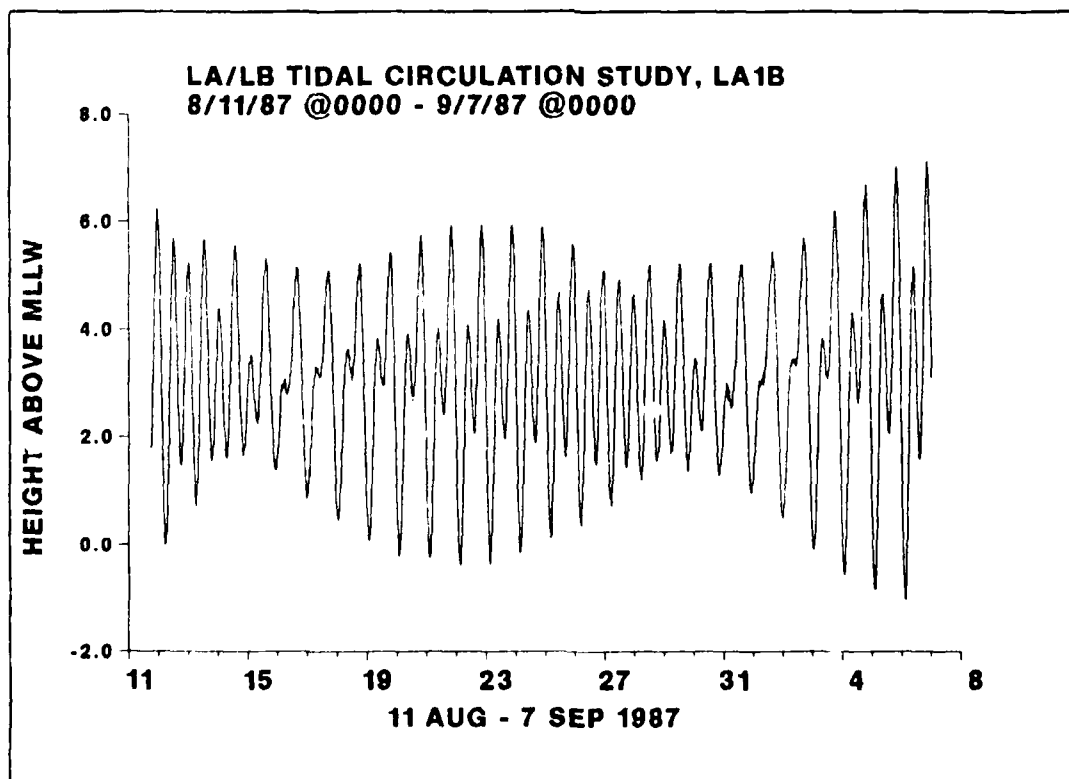
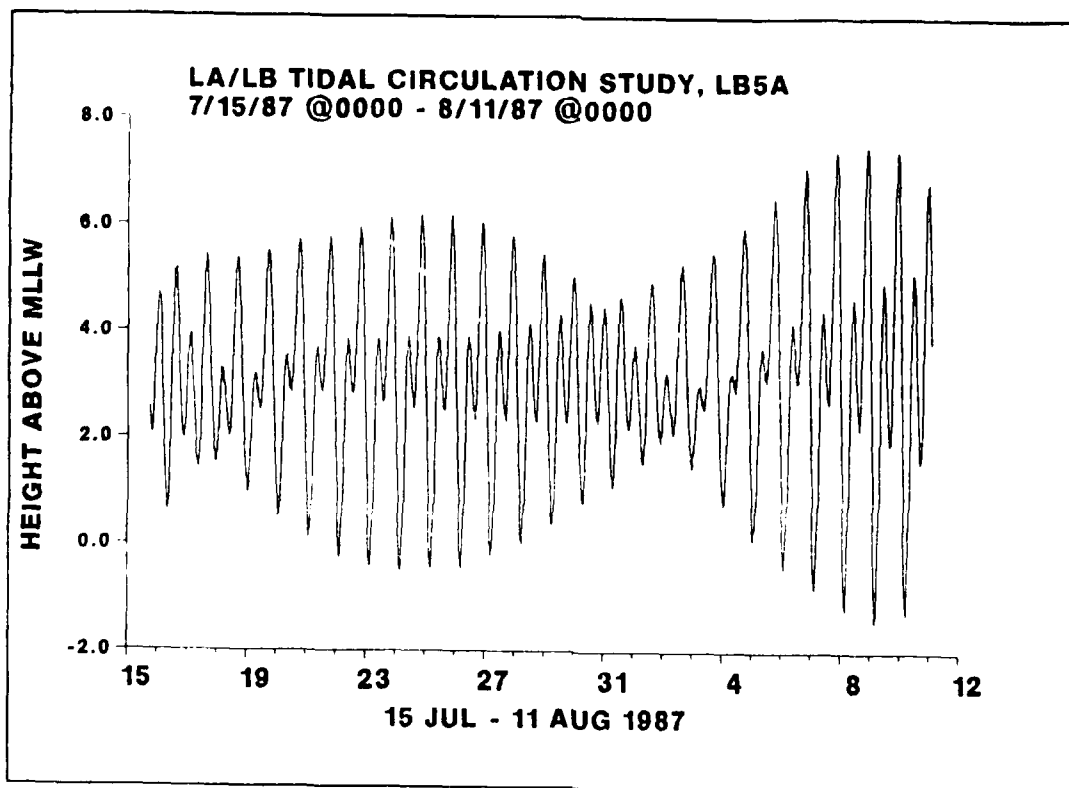


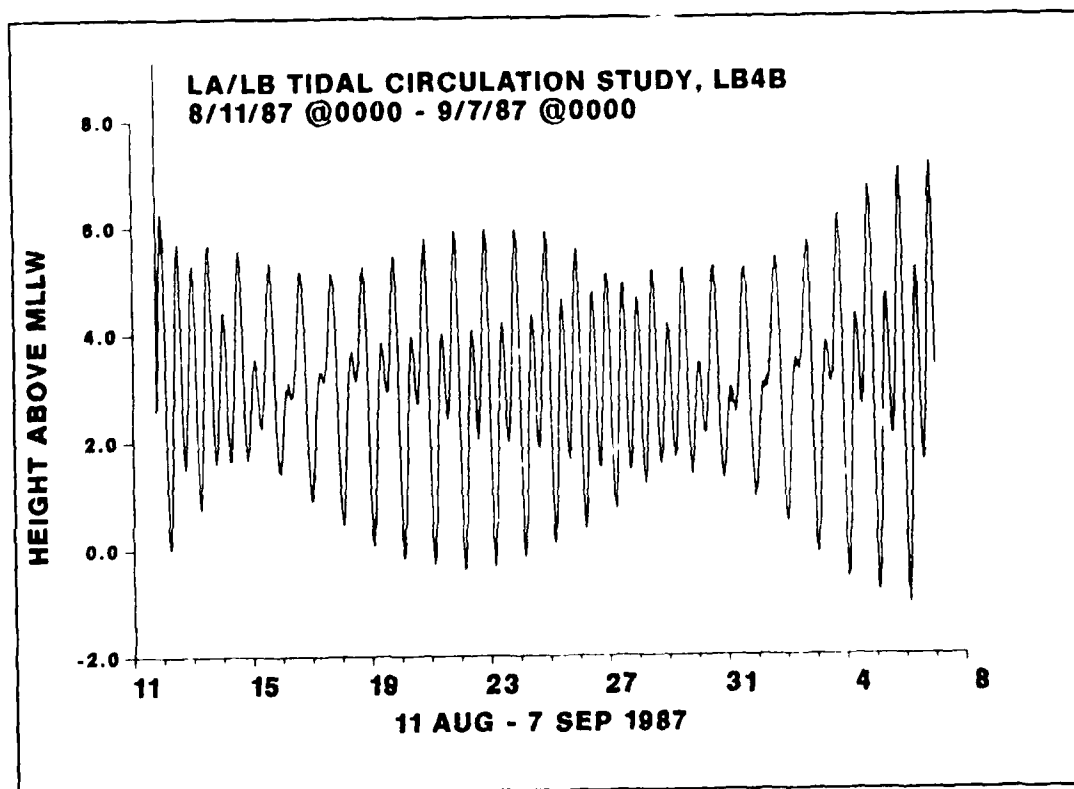
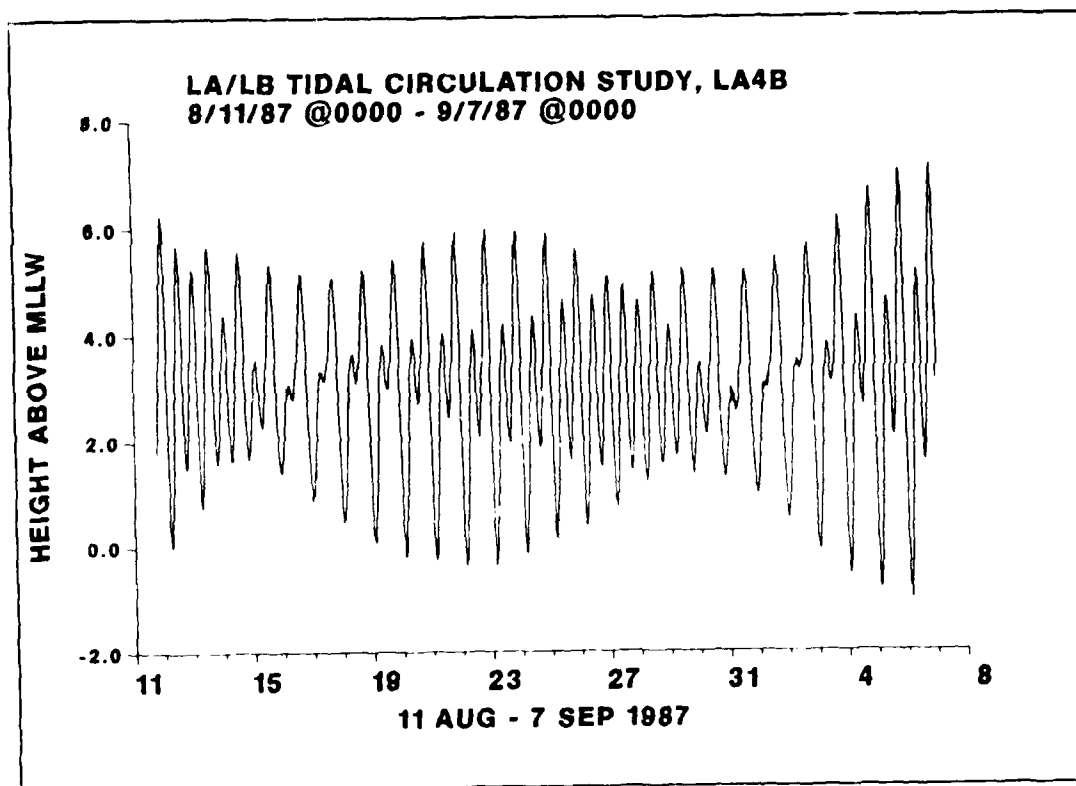


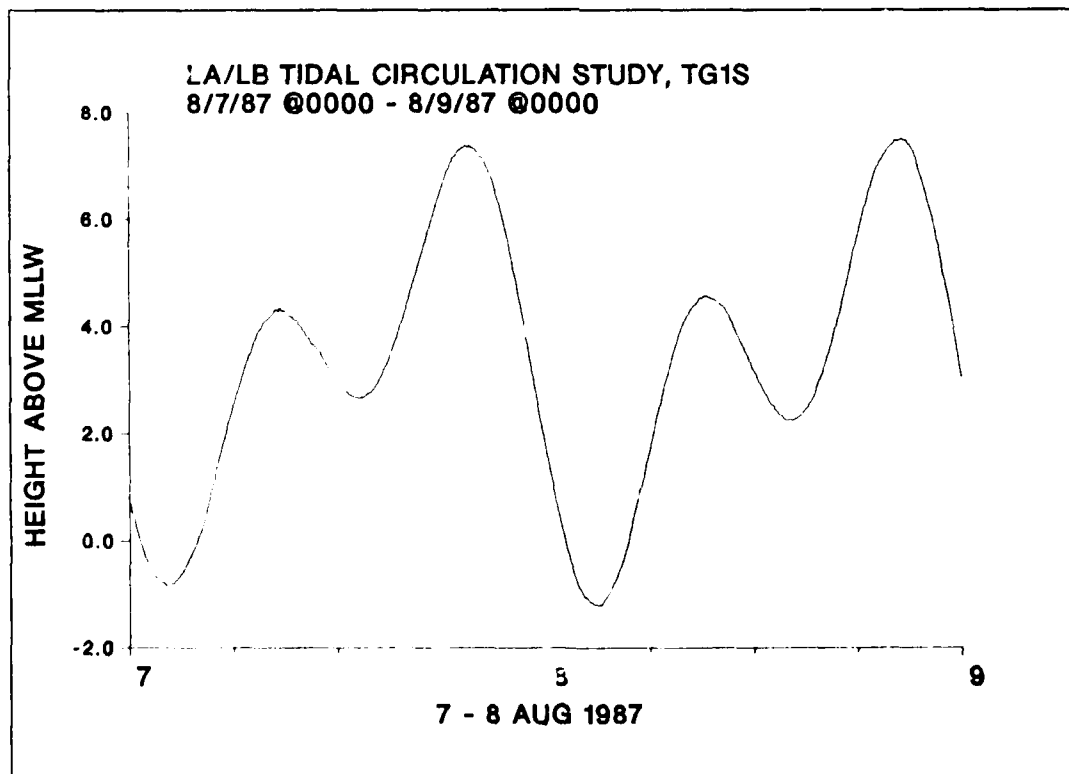
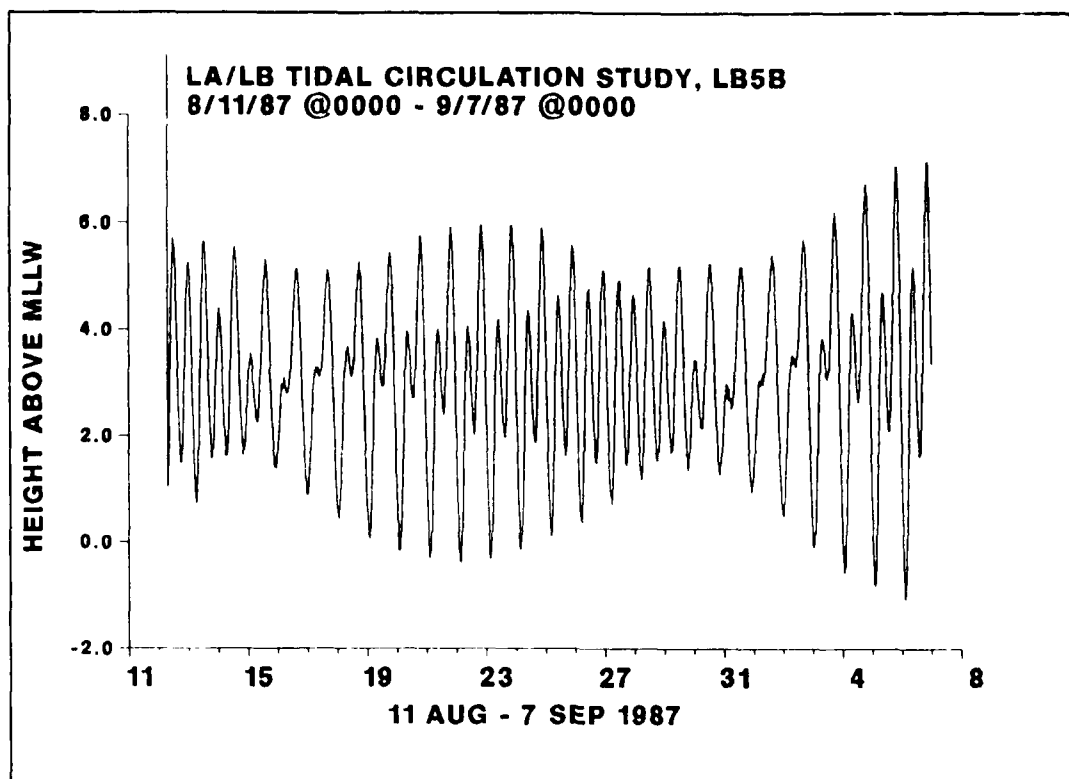


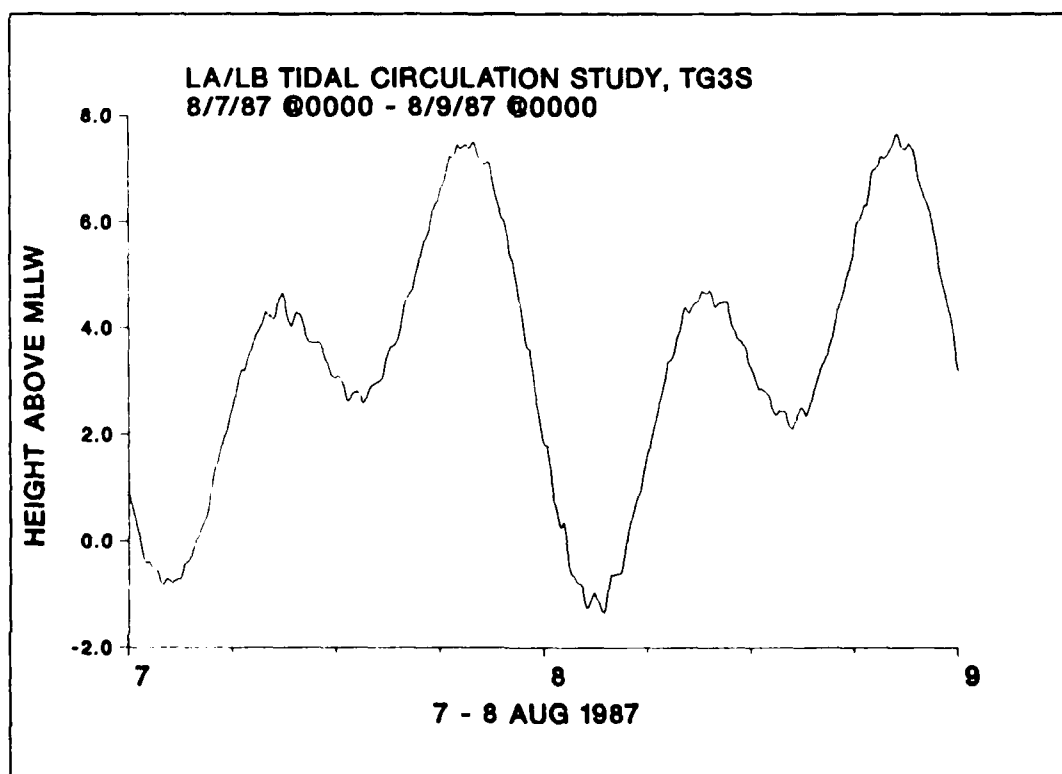
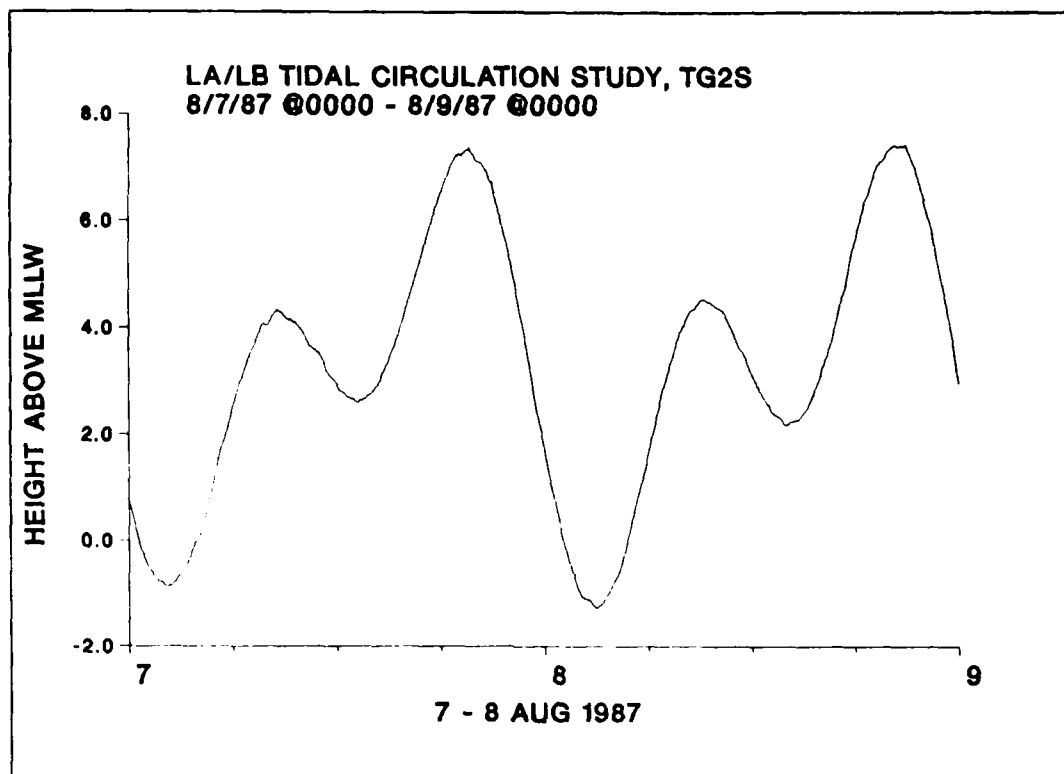


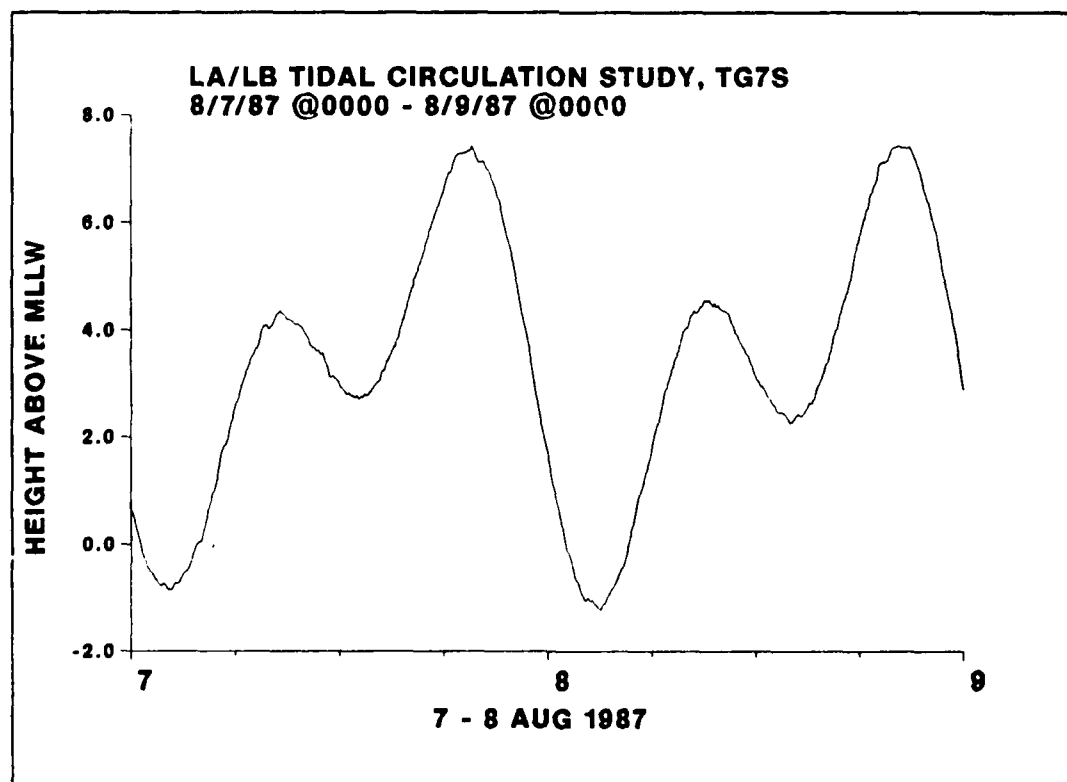
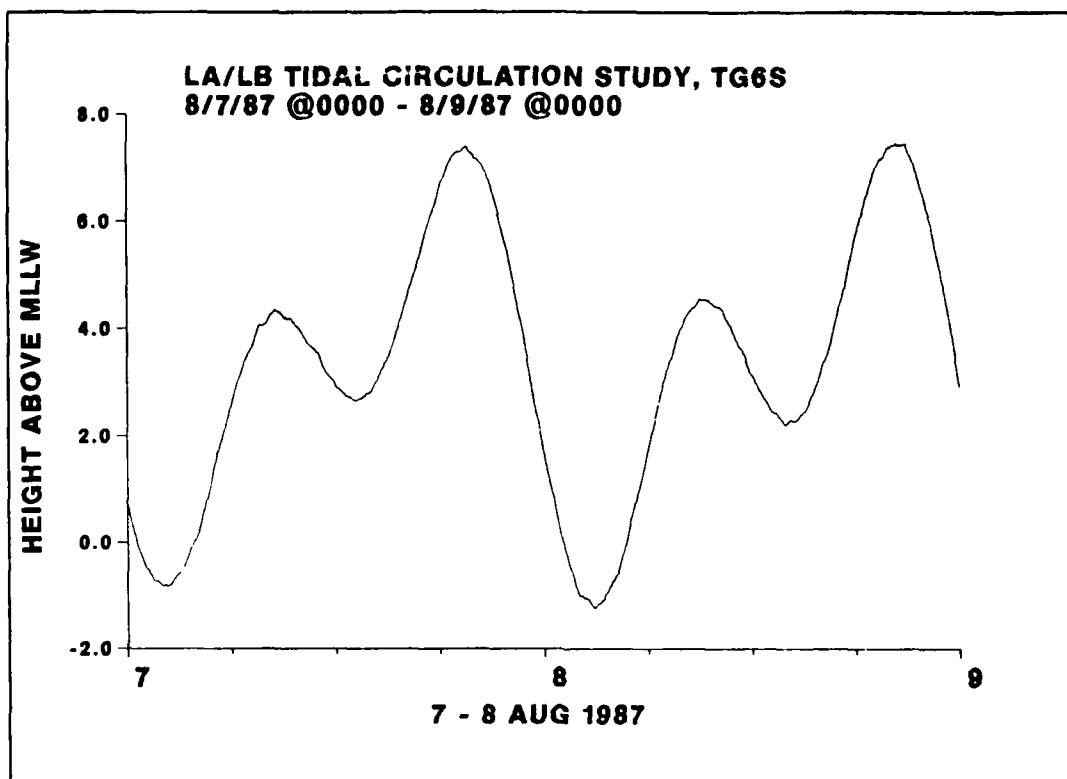


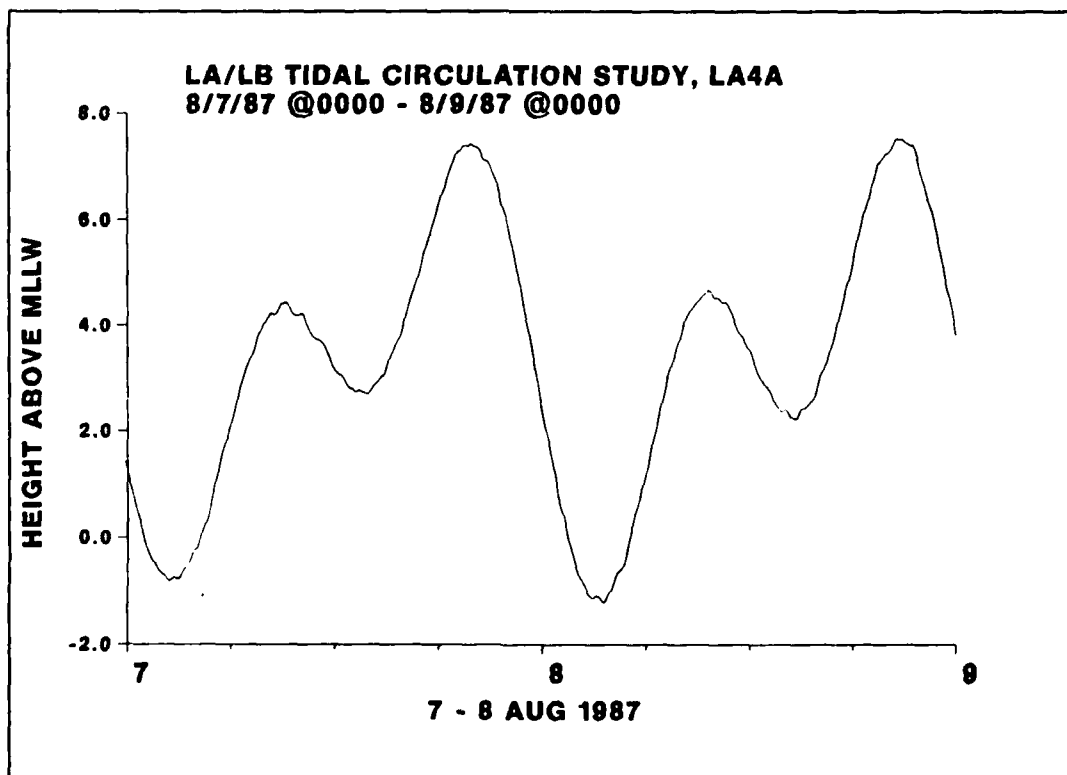
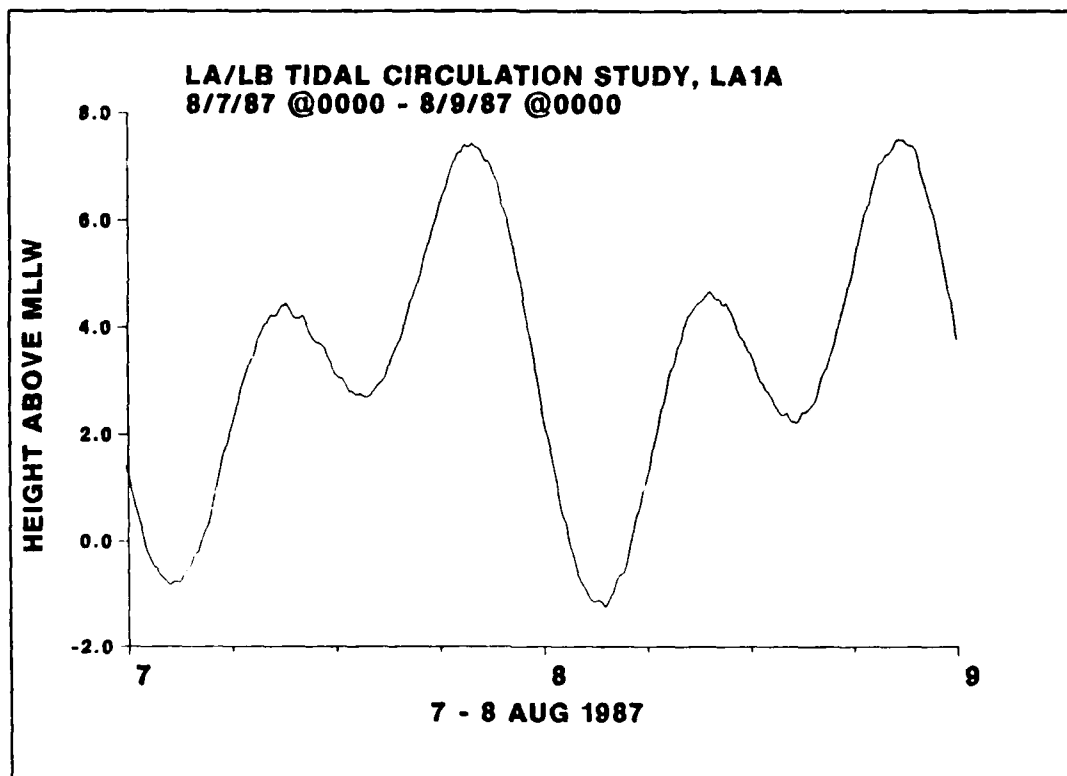


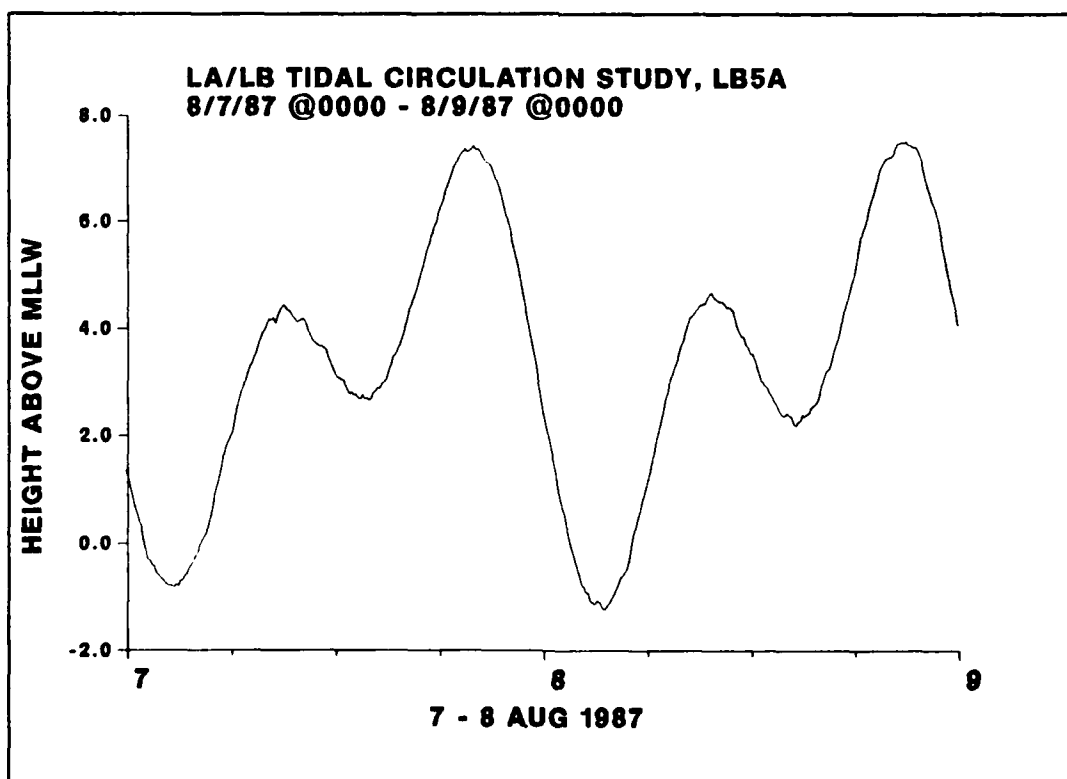
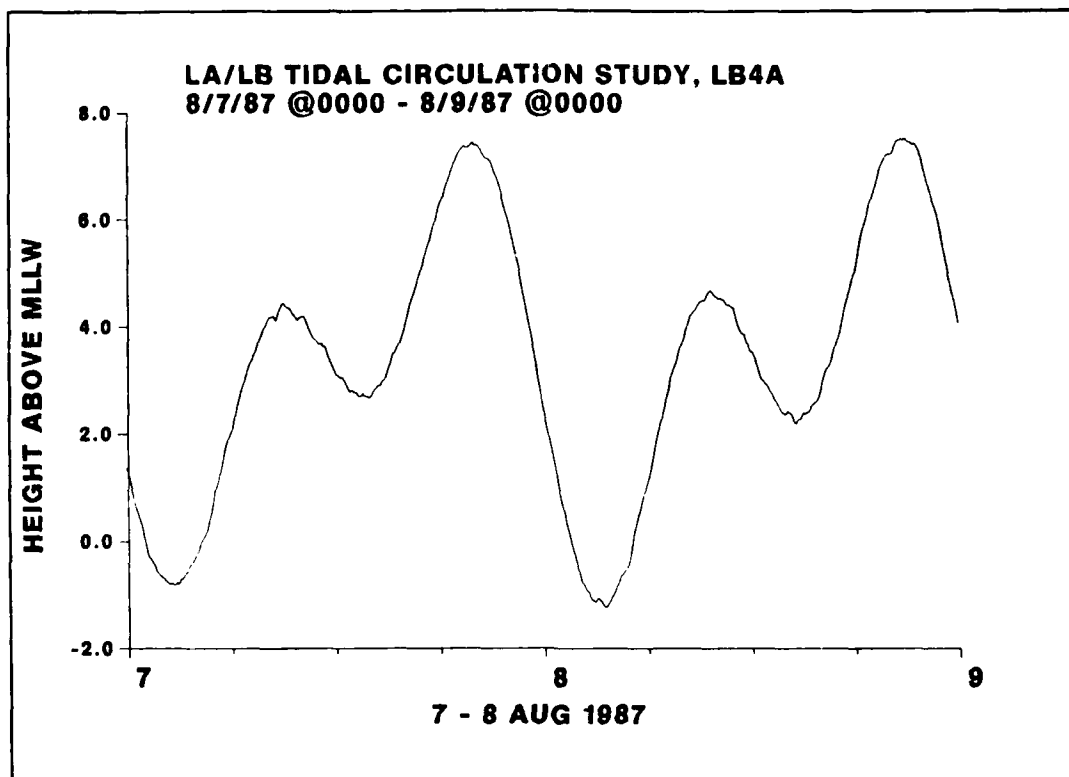


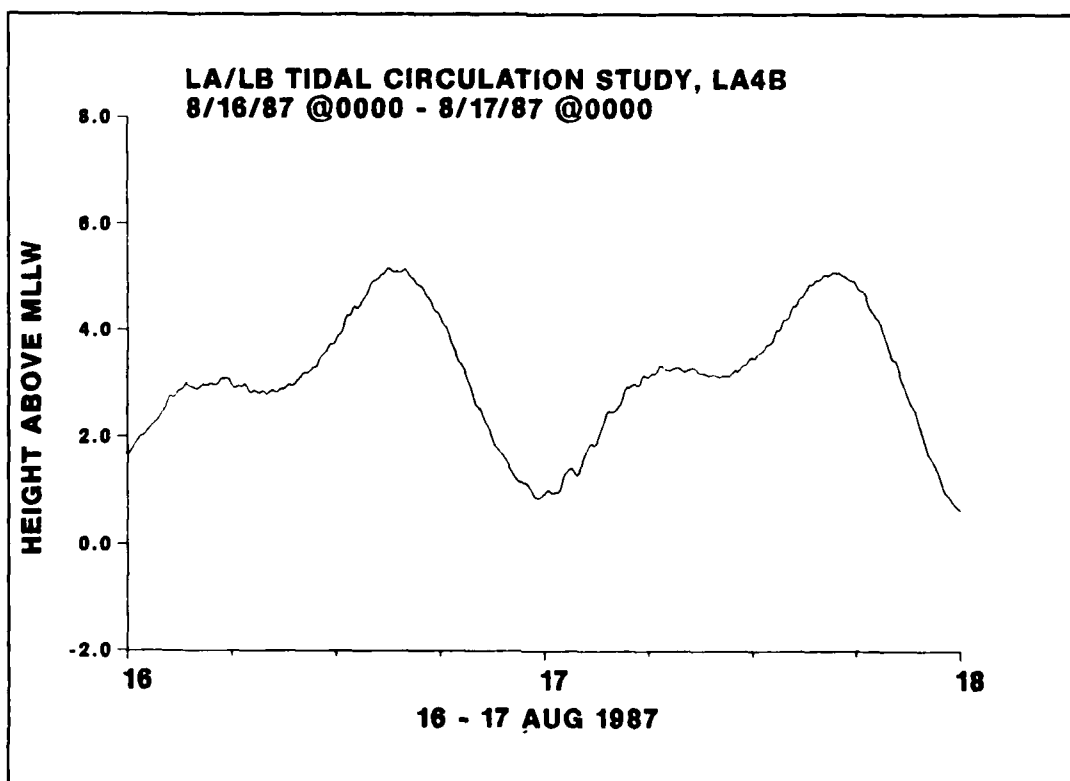
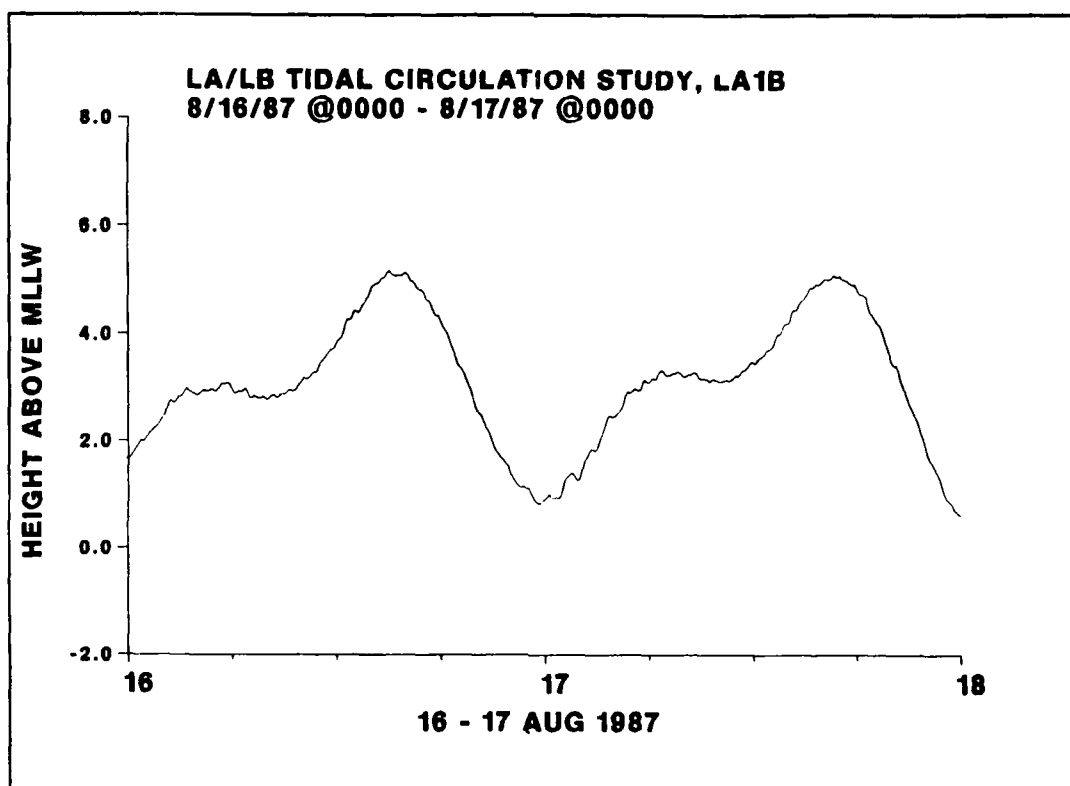


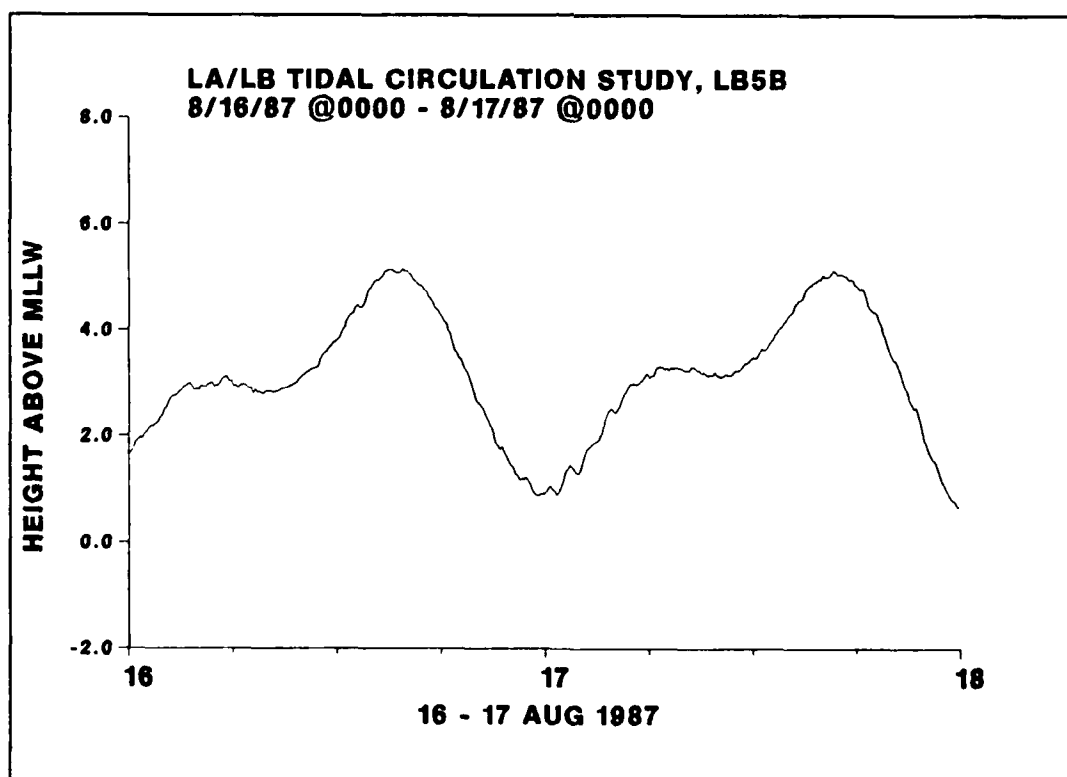
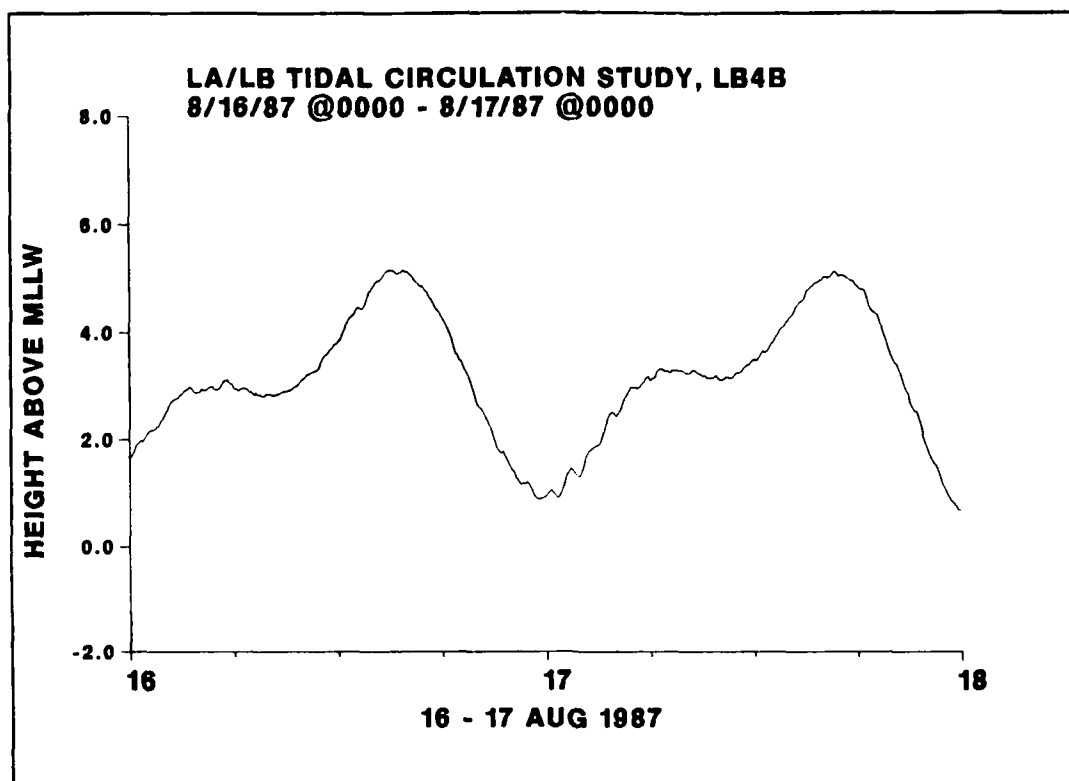


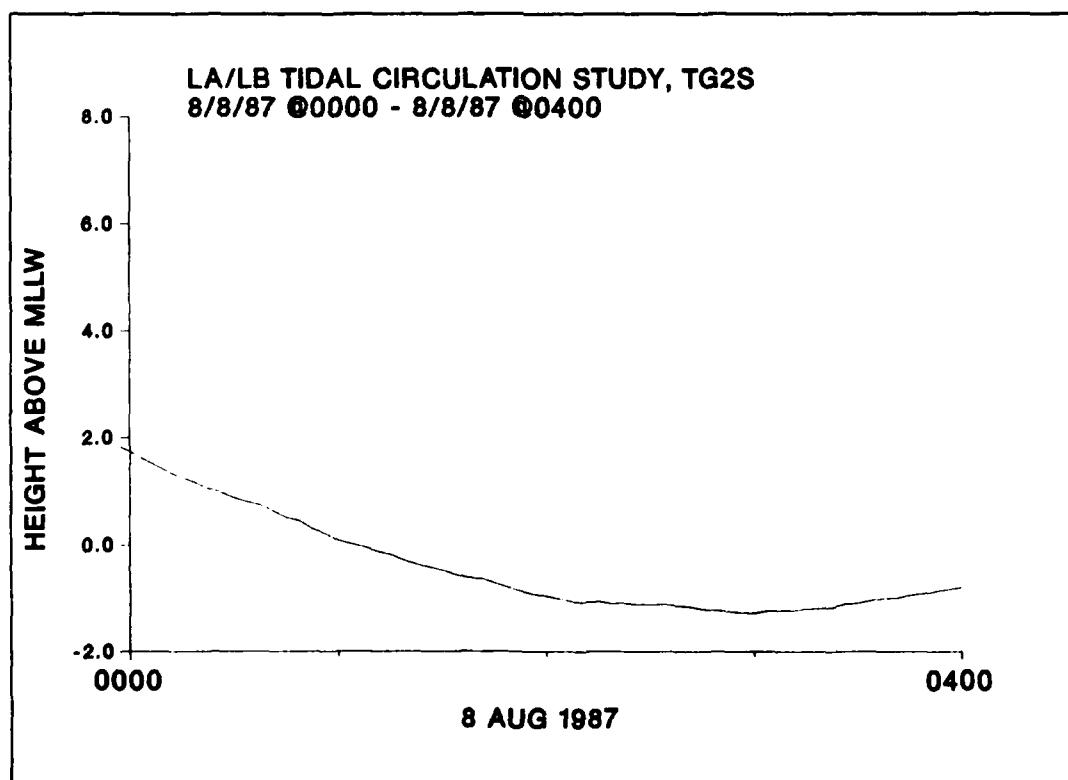
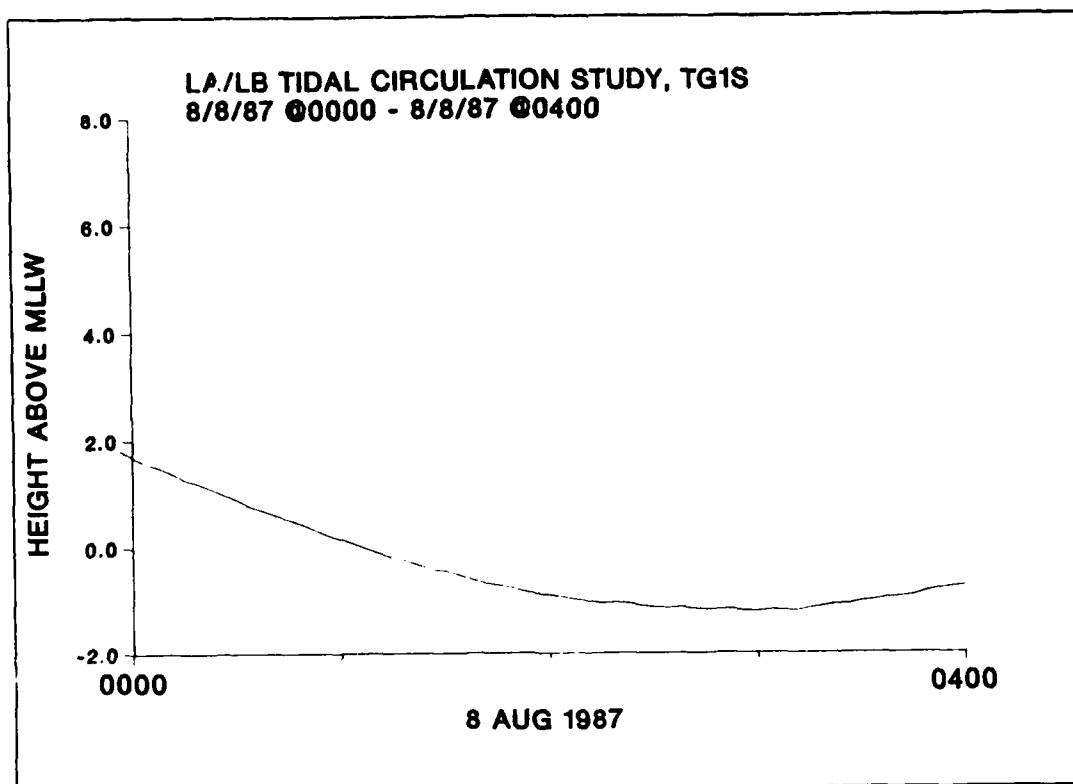


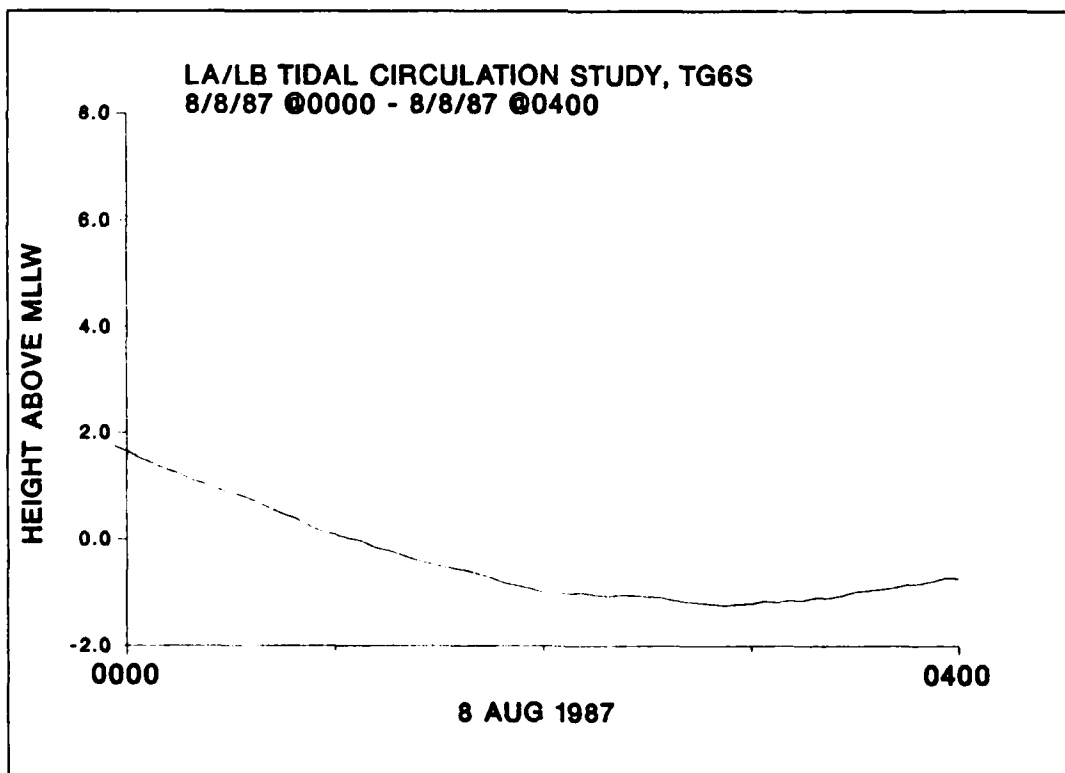
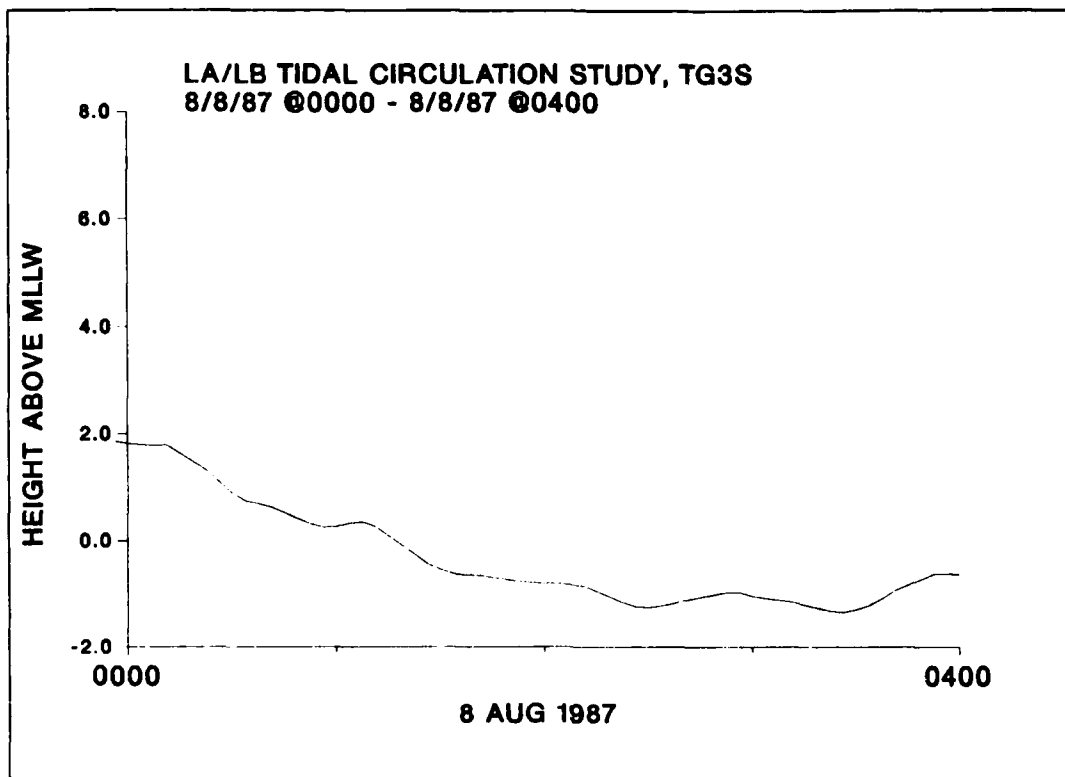


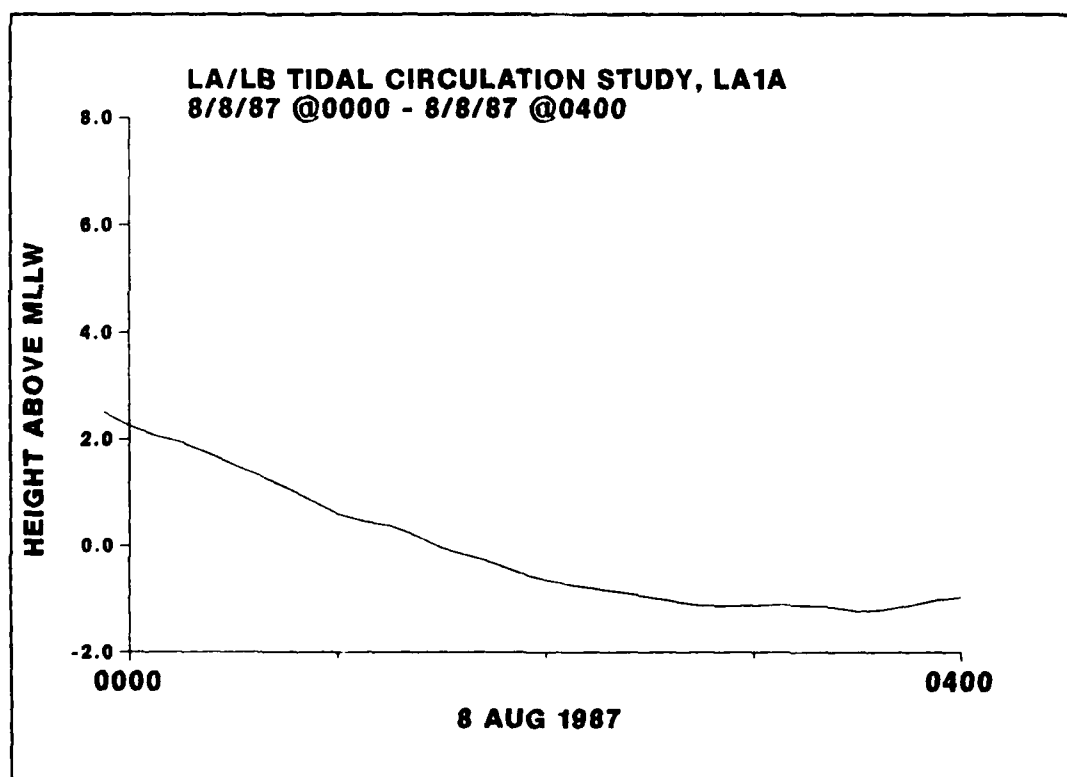
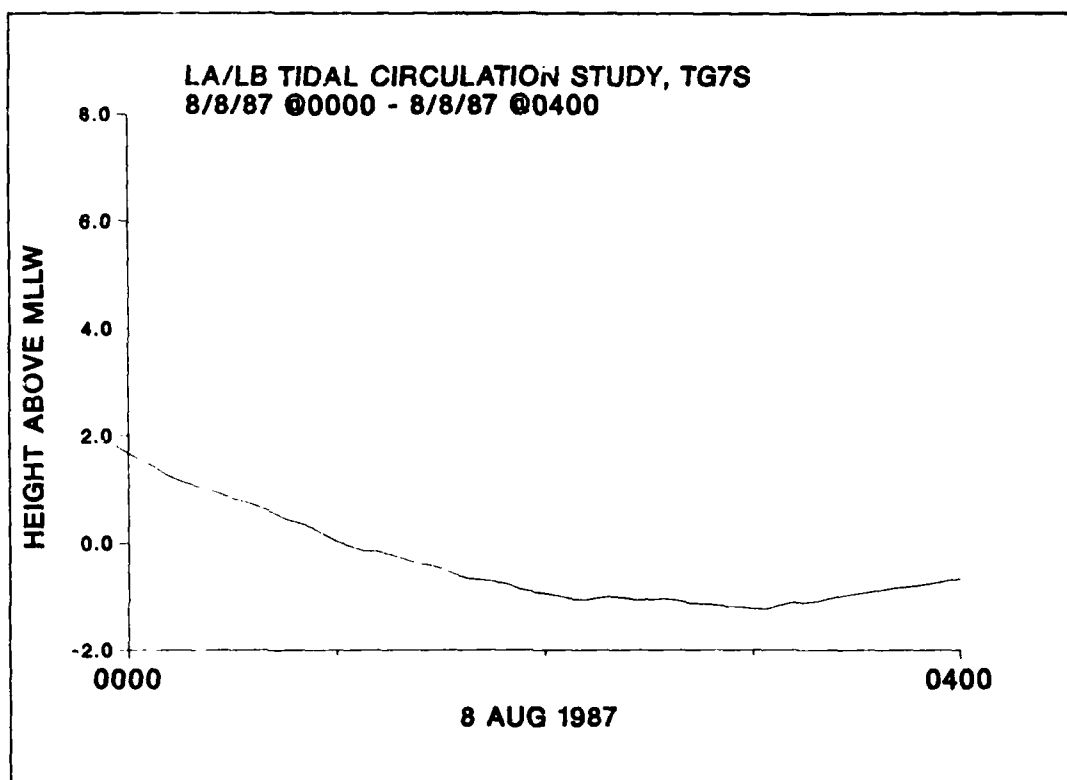


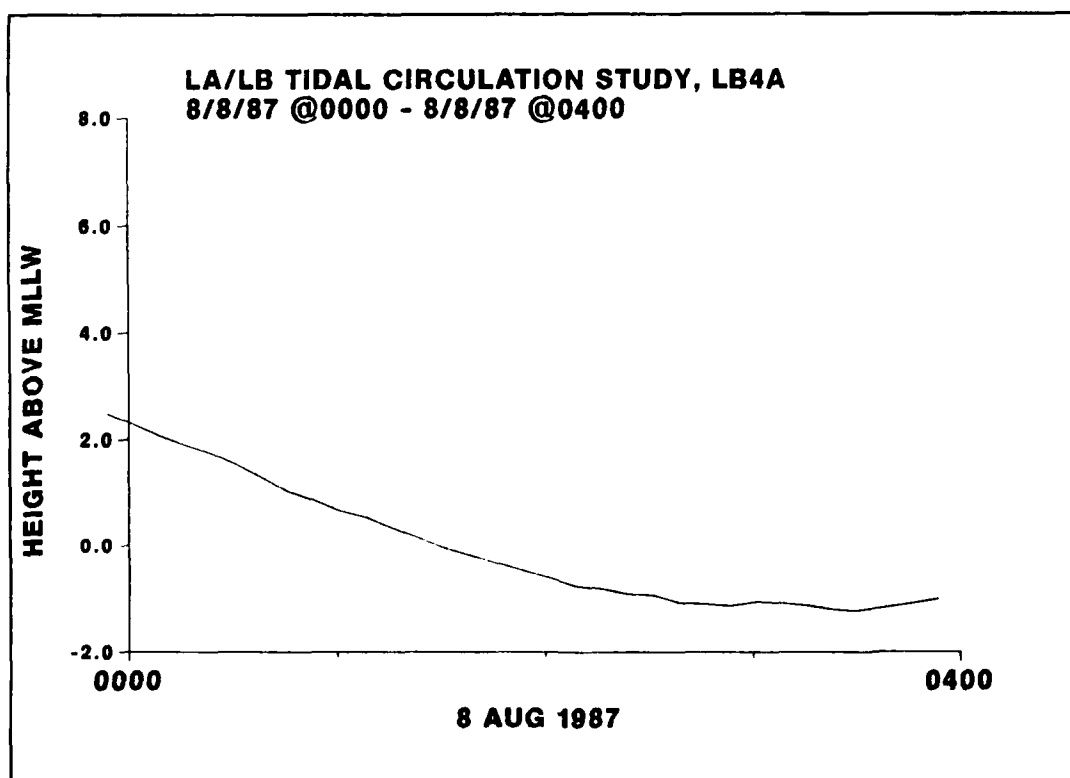
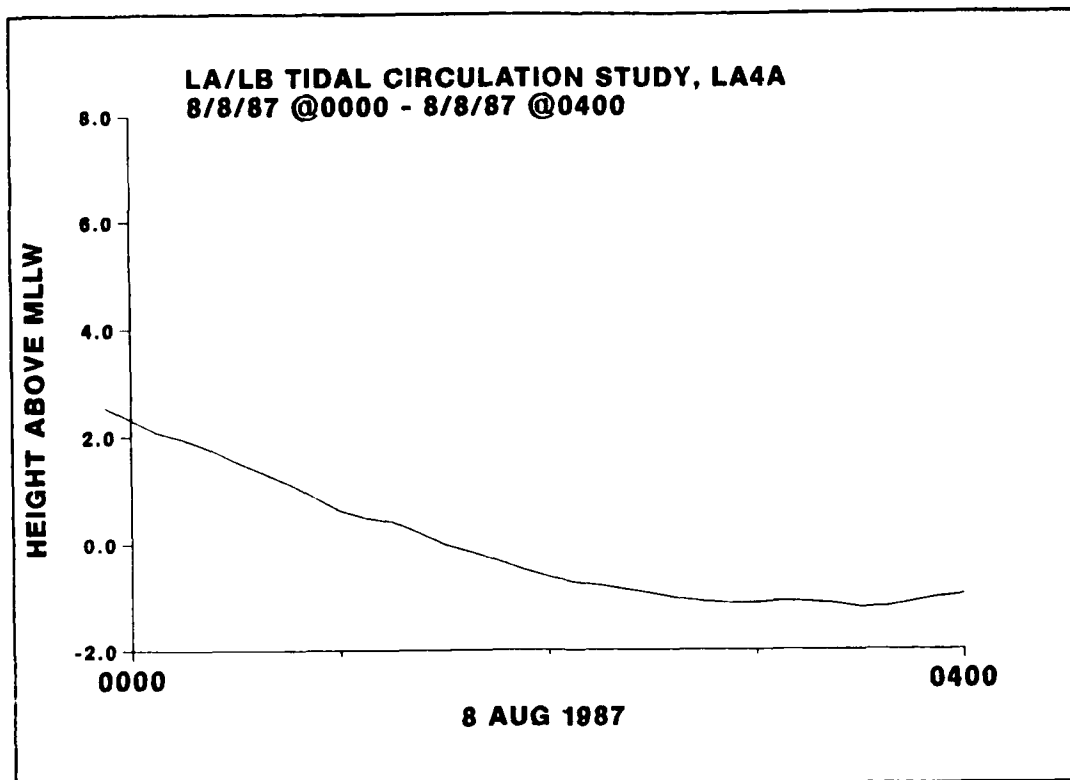


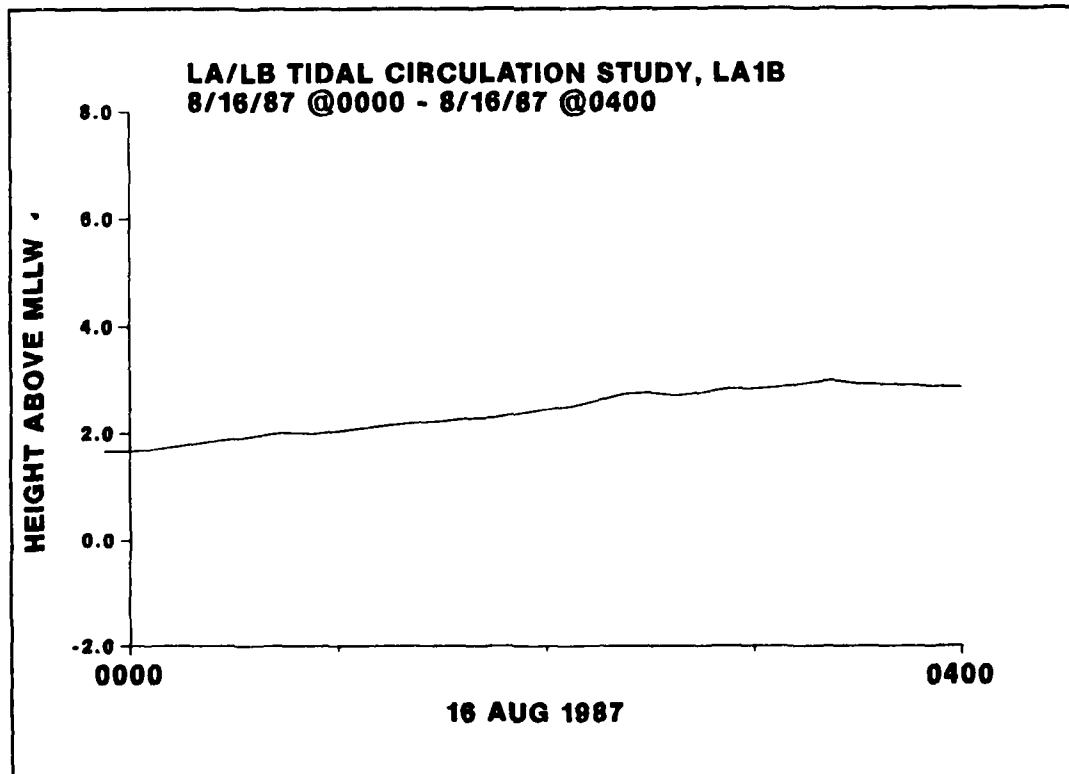
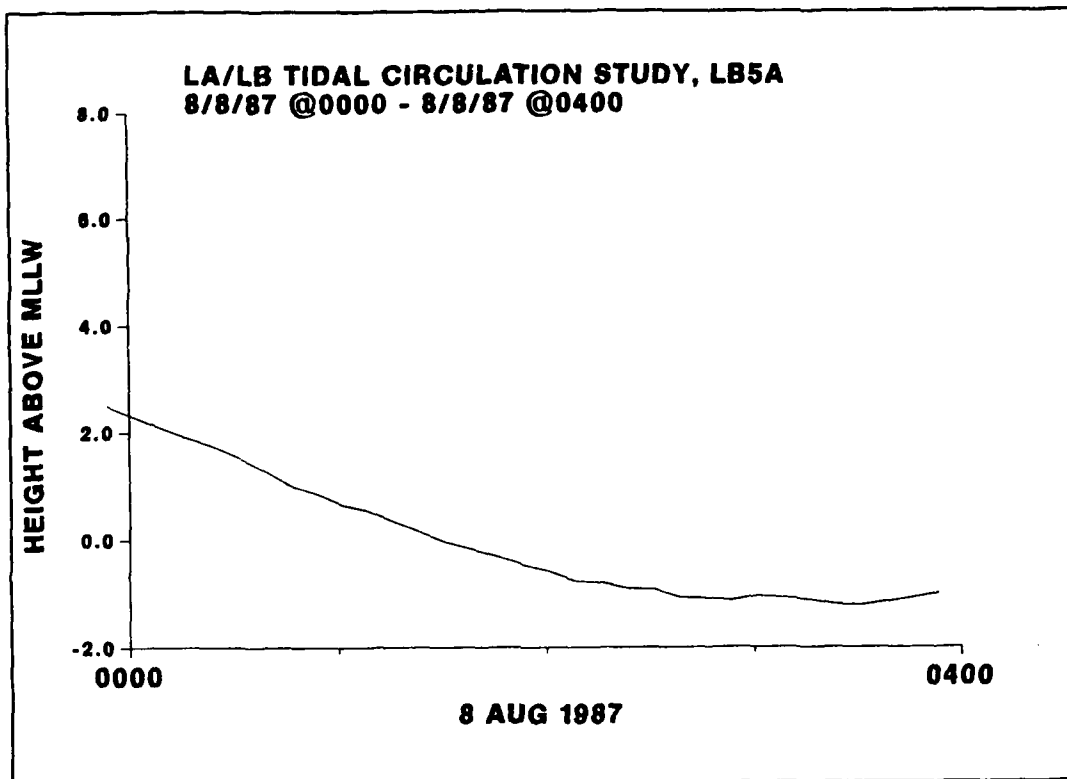


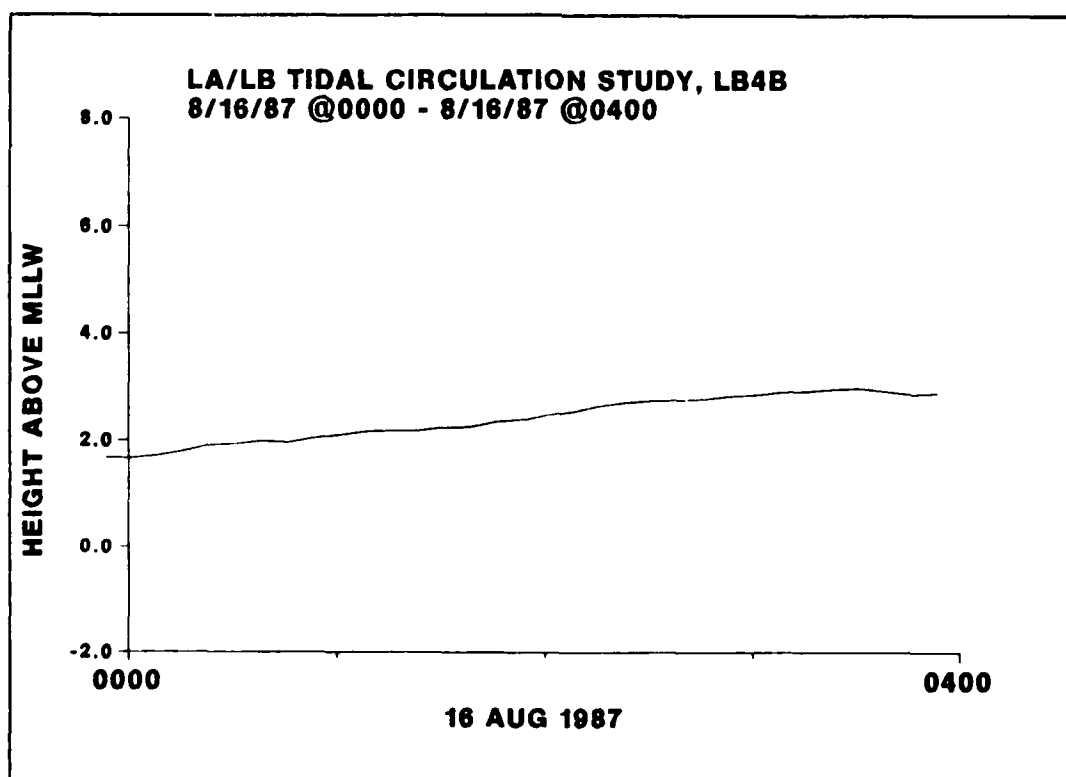
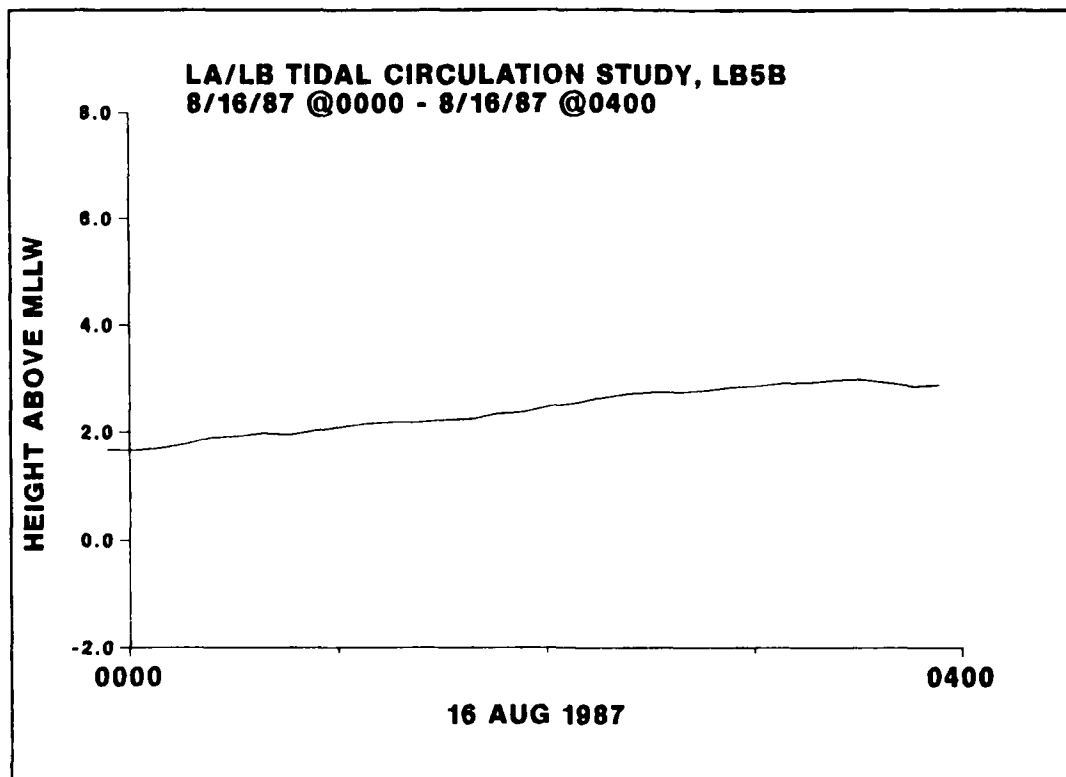


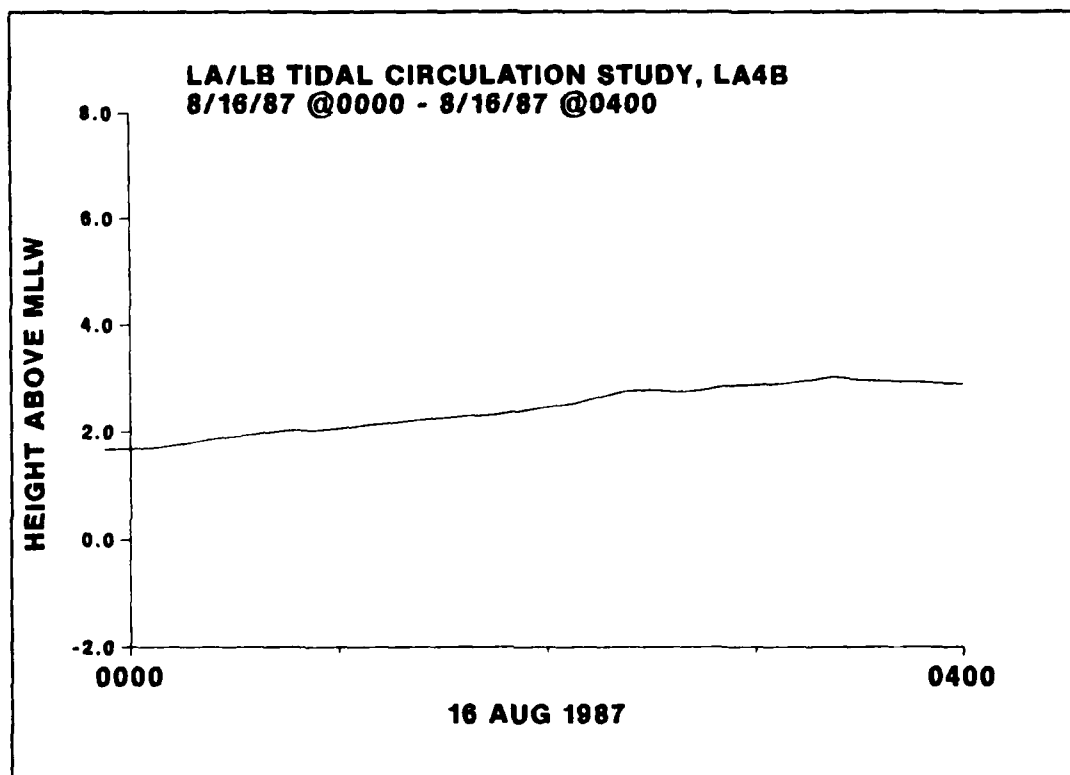






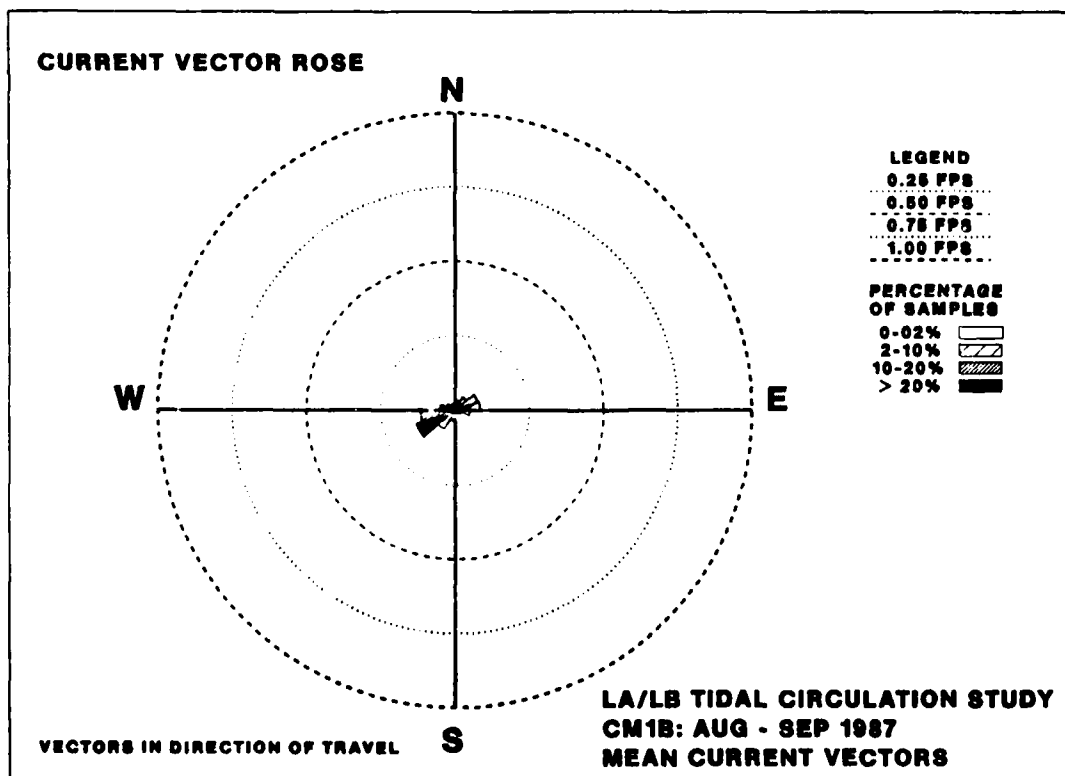
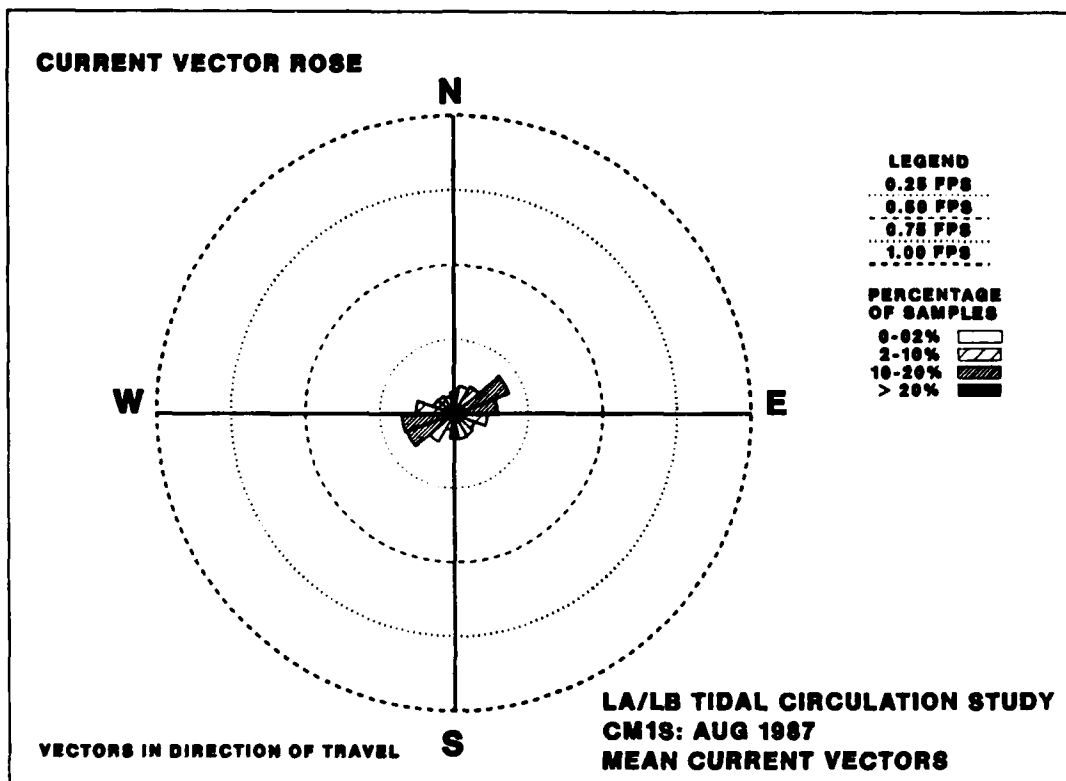


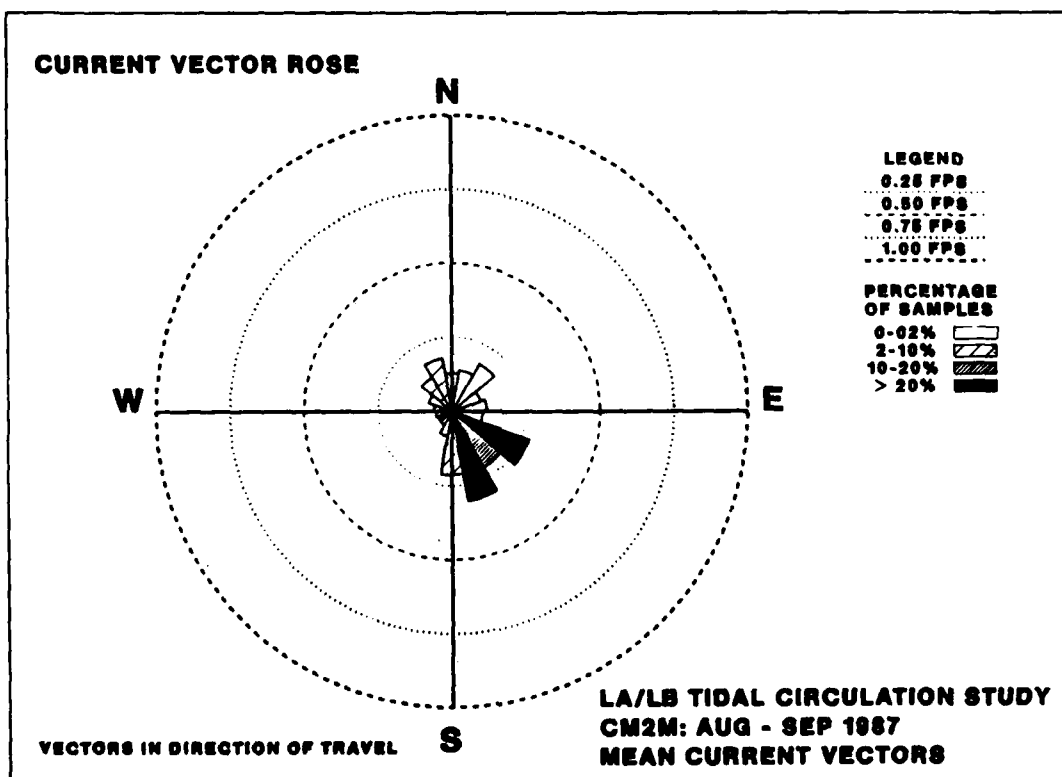
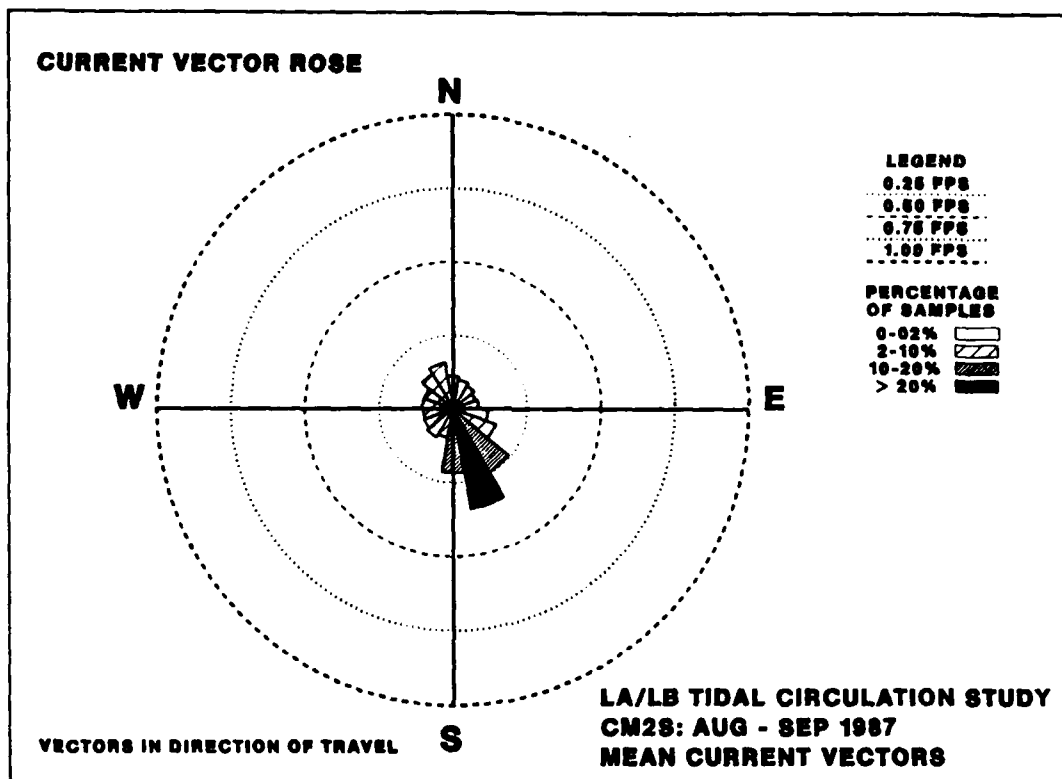


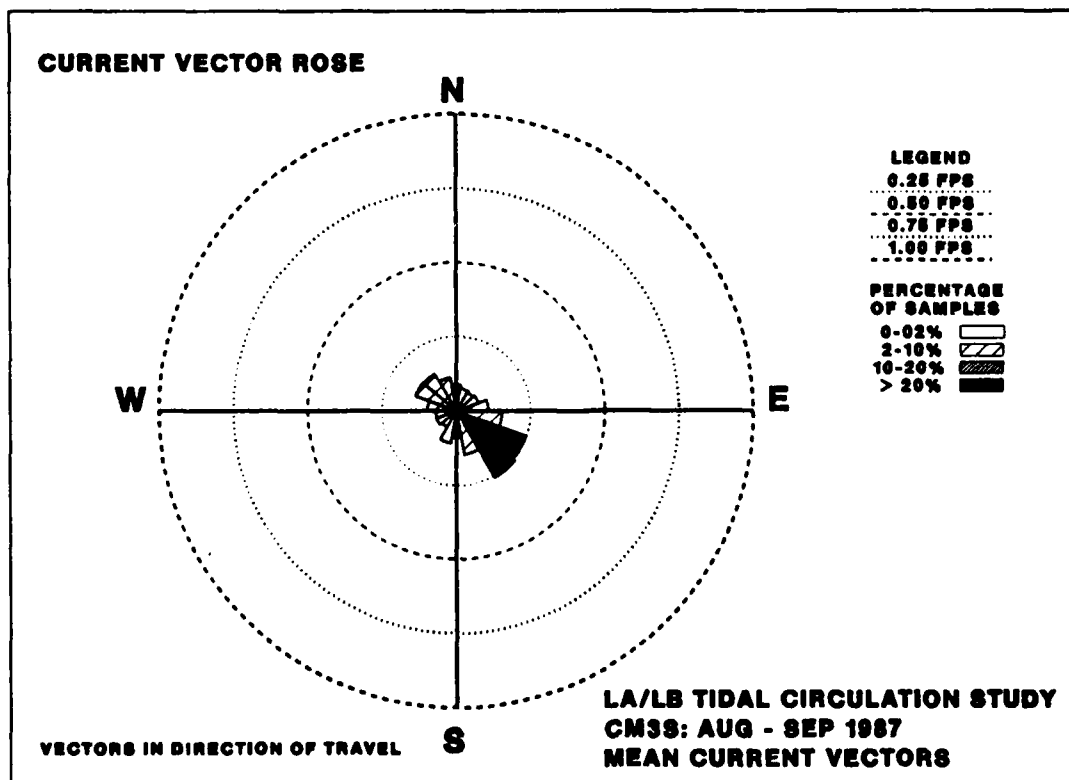
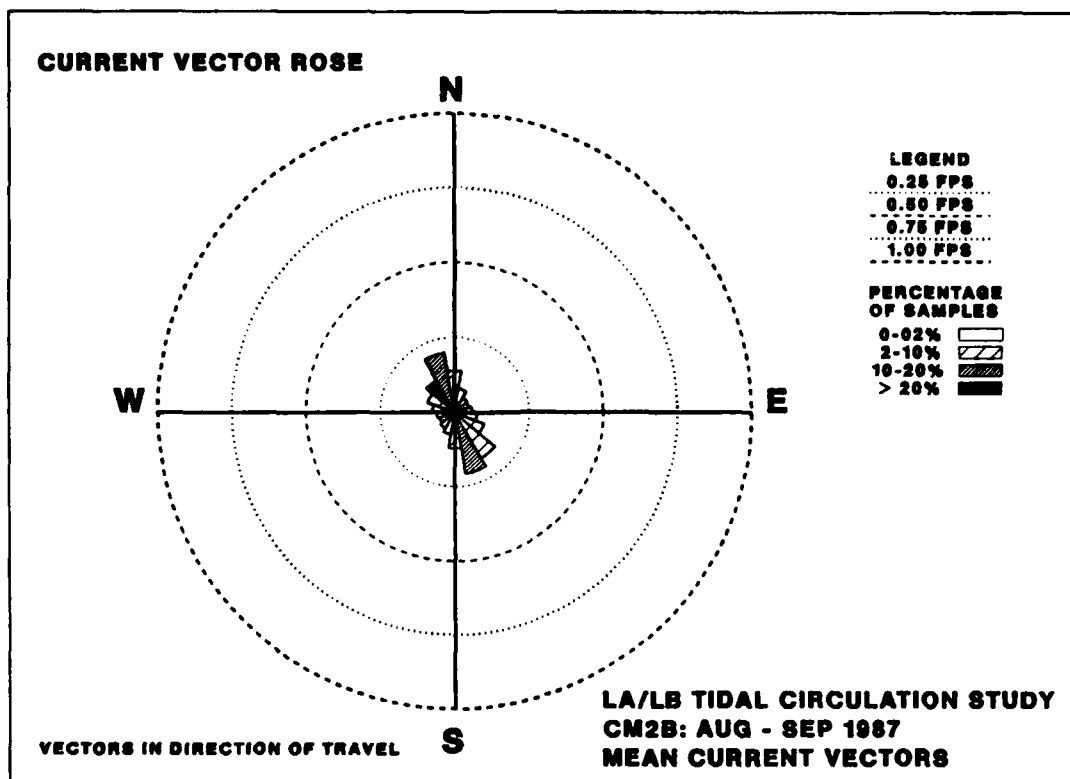


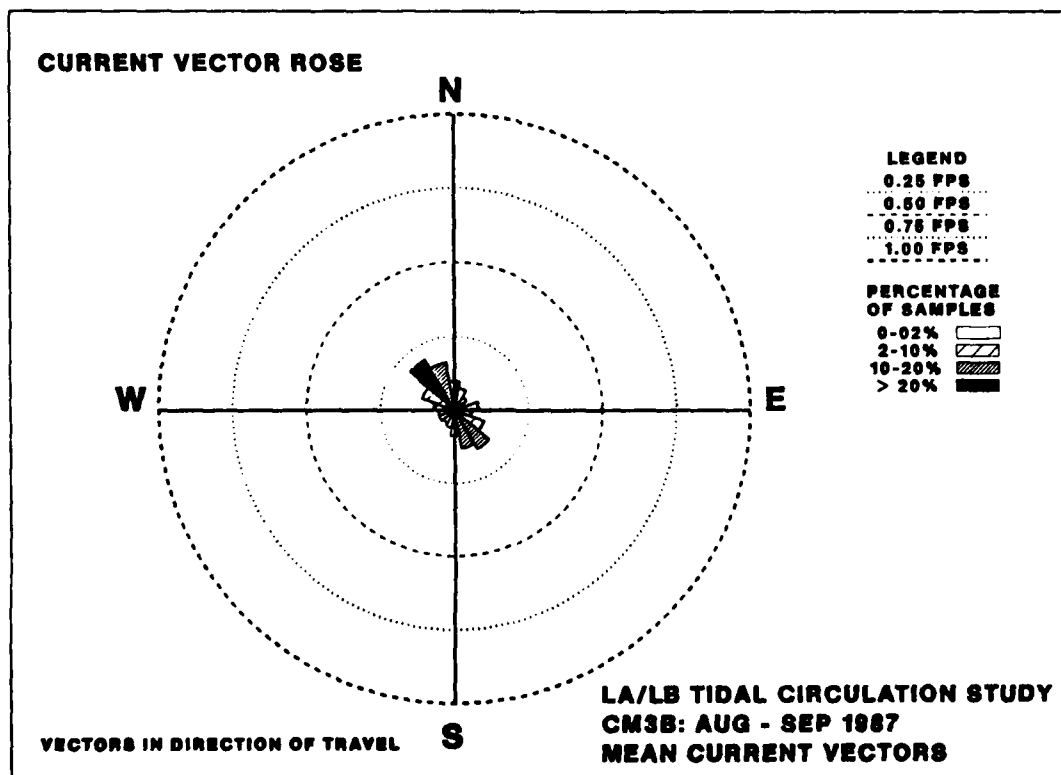
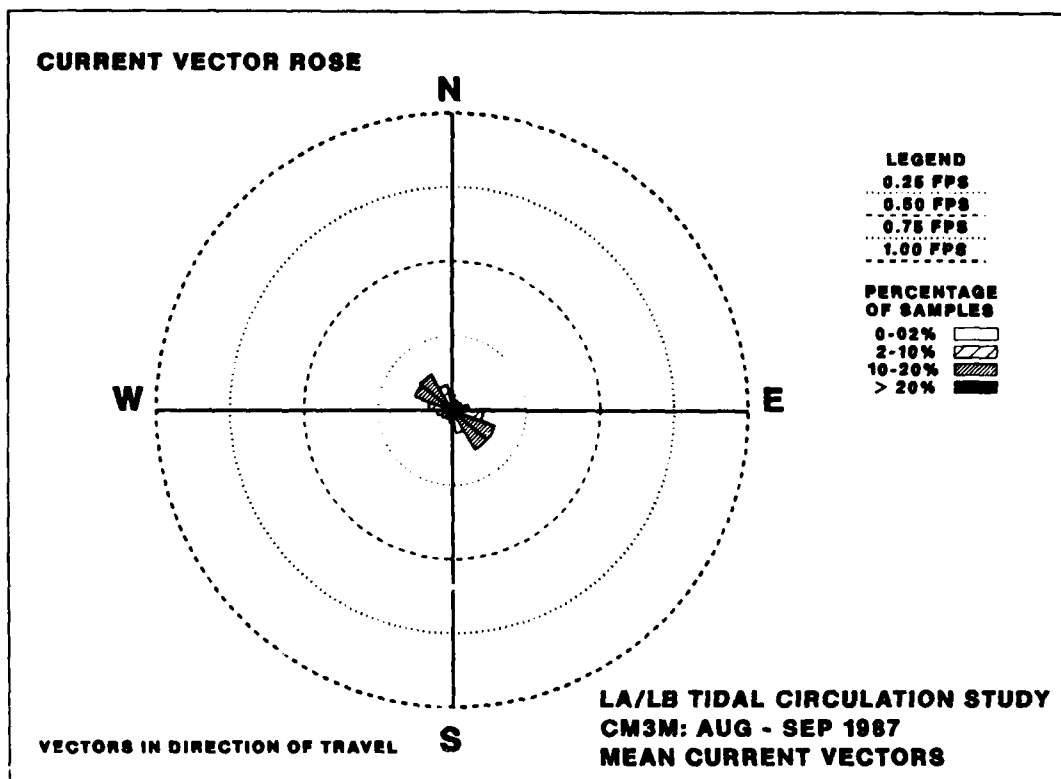
APPENDIX E: CURRENT VECTOR ROSE PLOTS

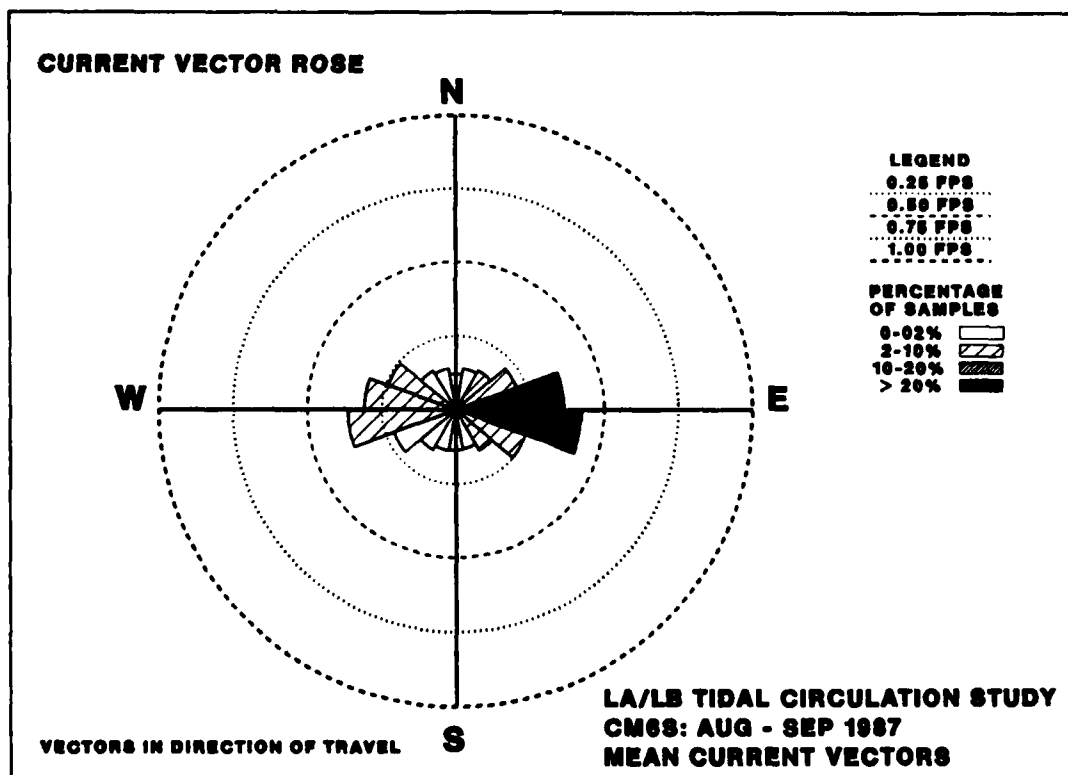
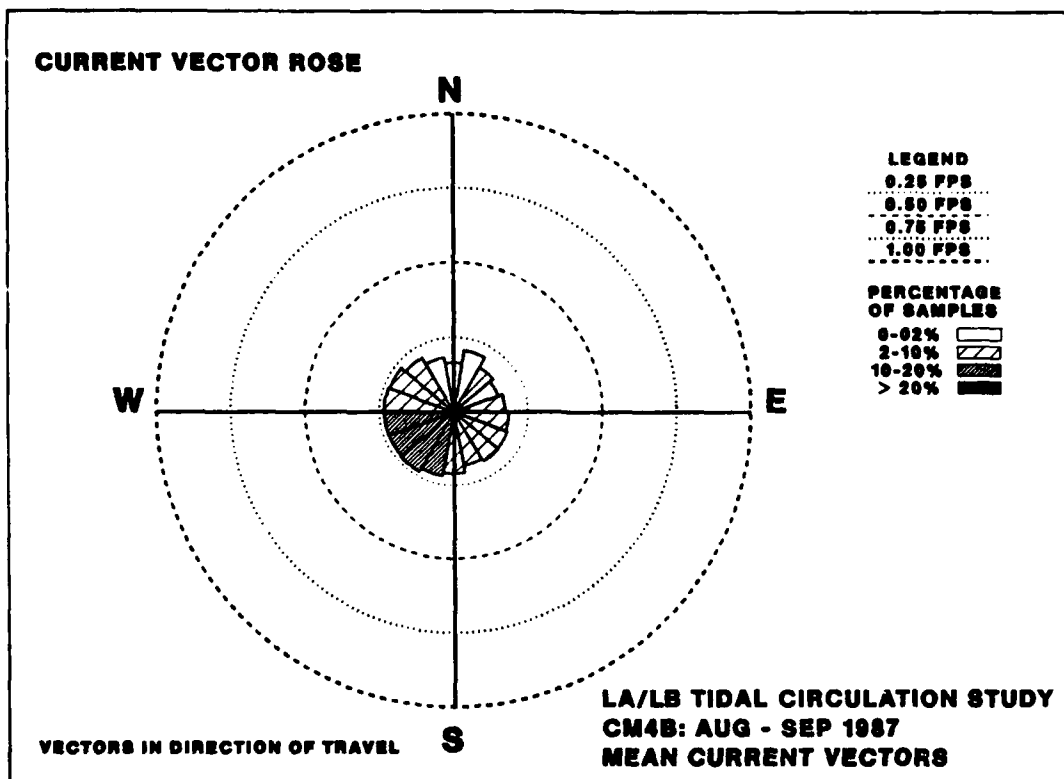
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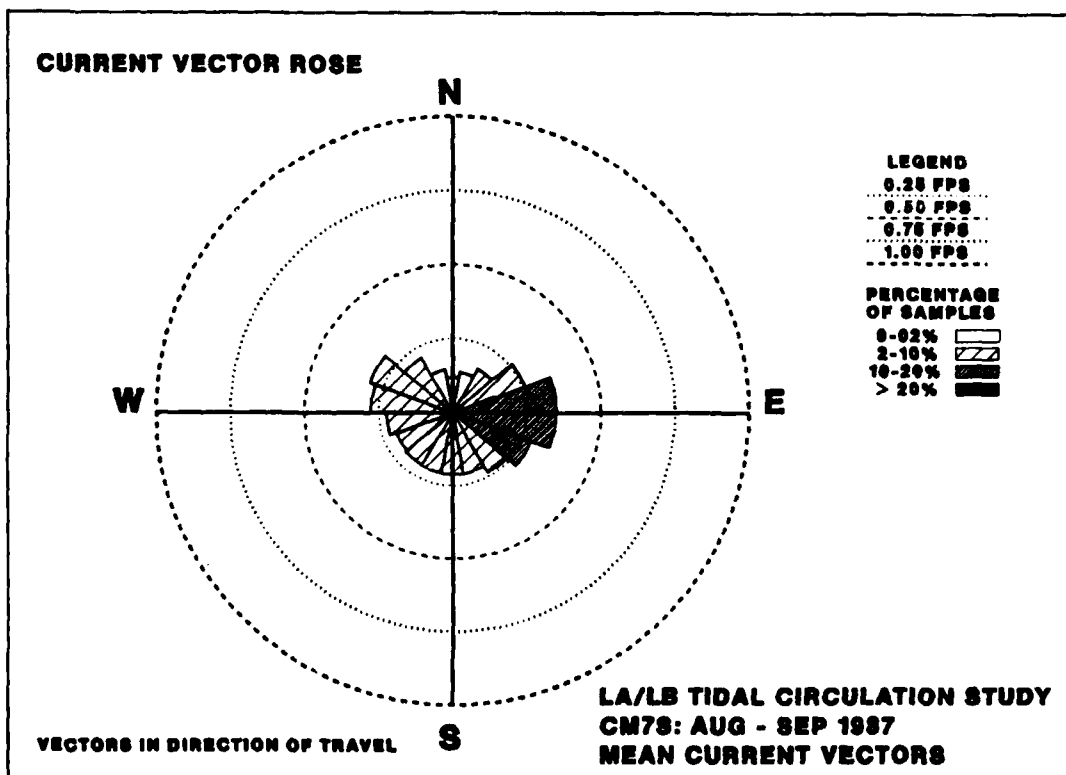
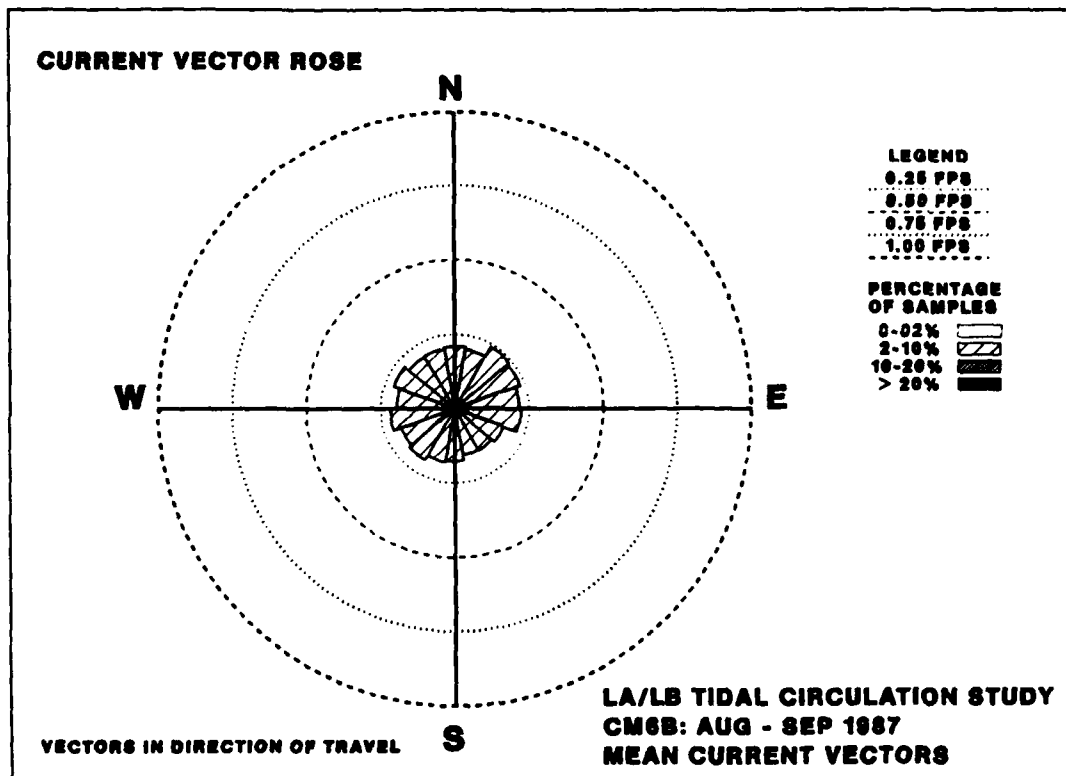


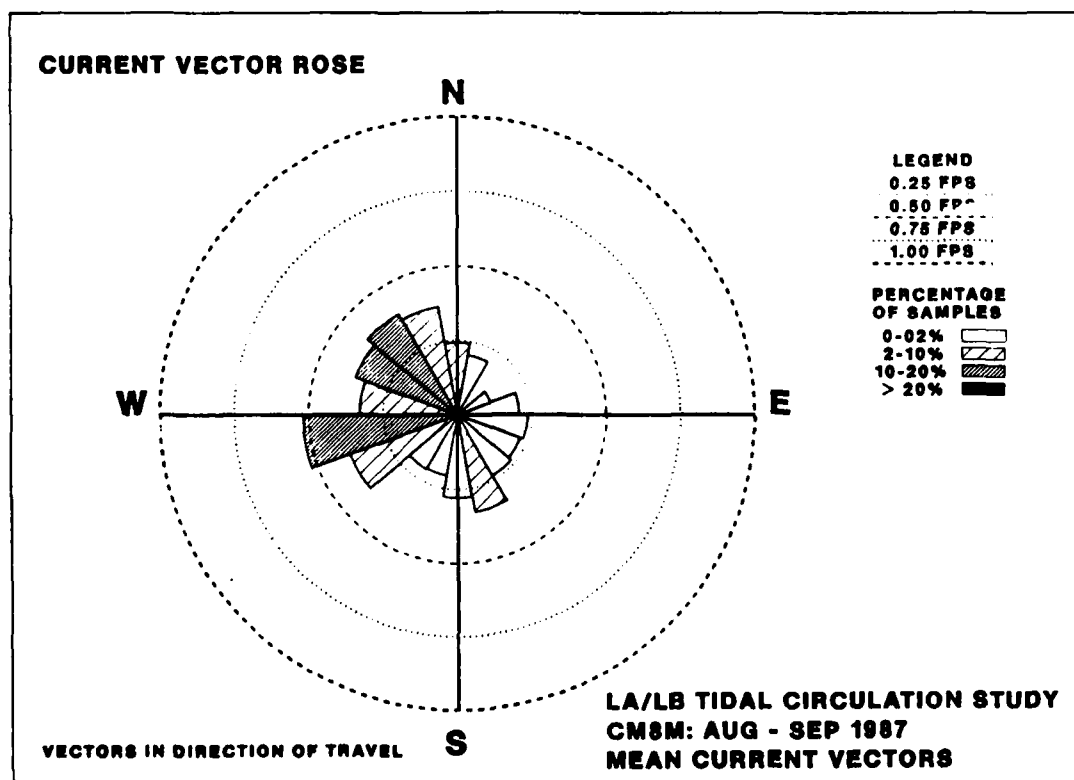
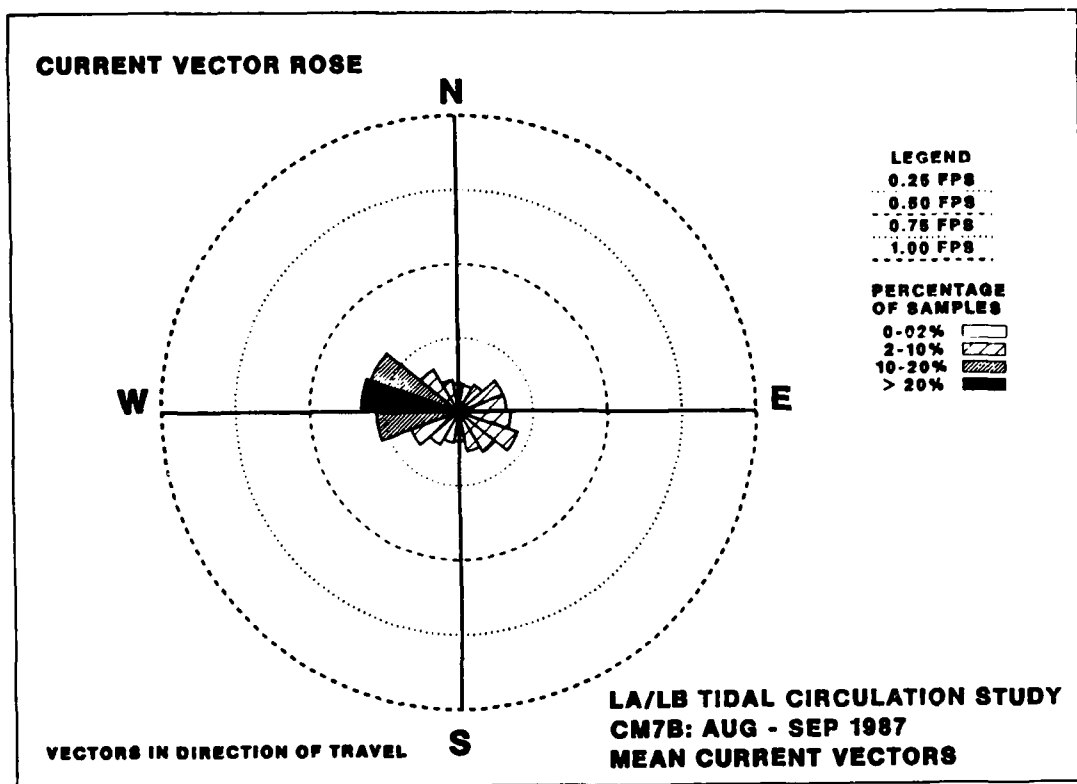






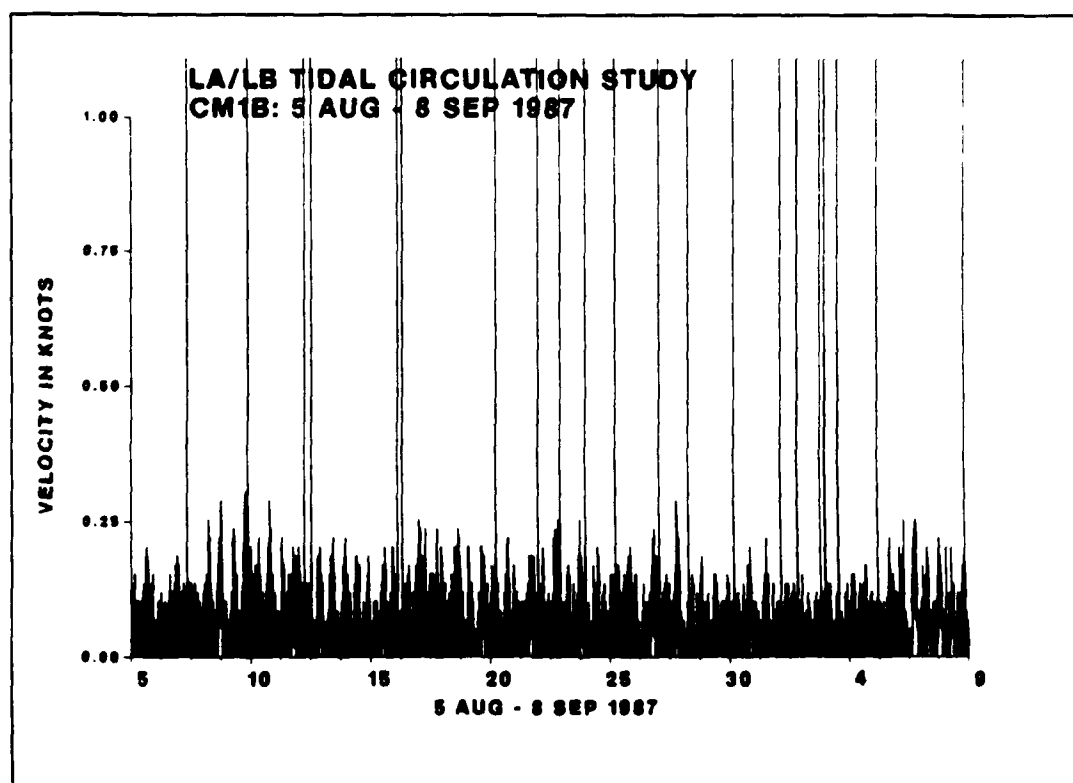
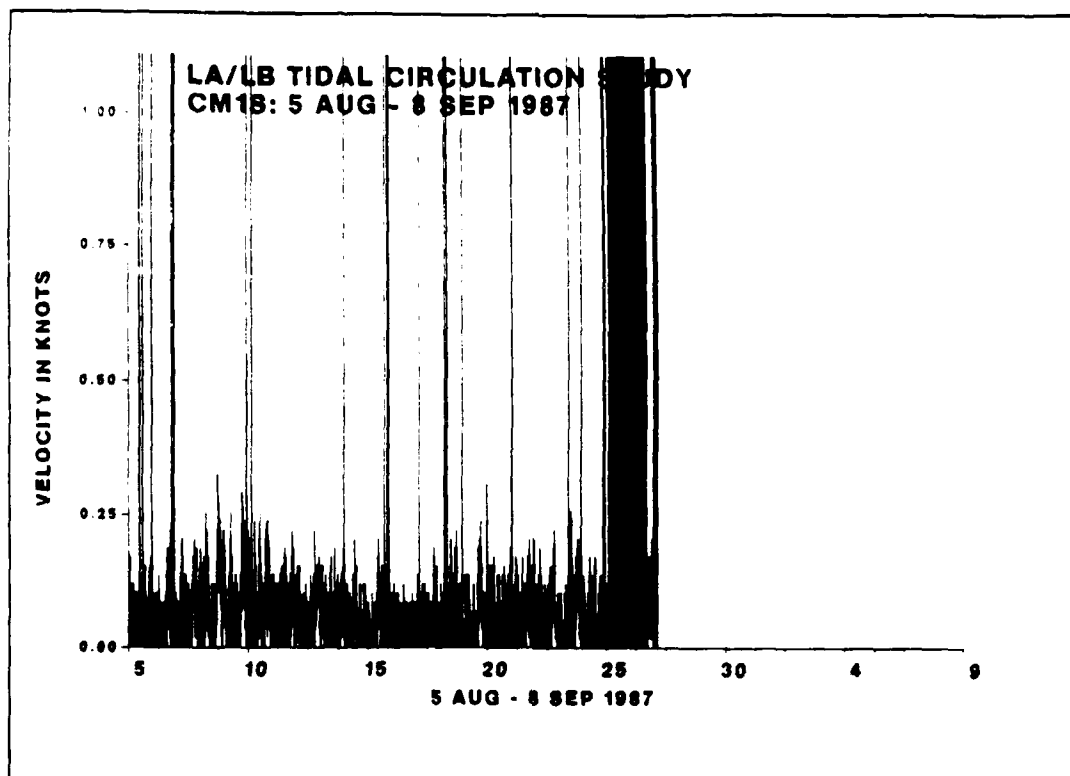


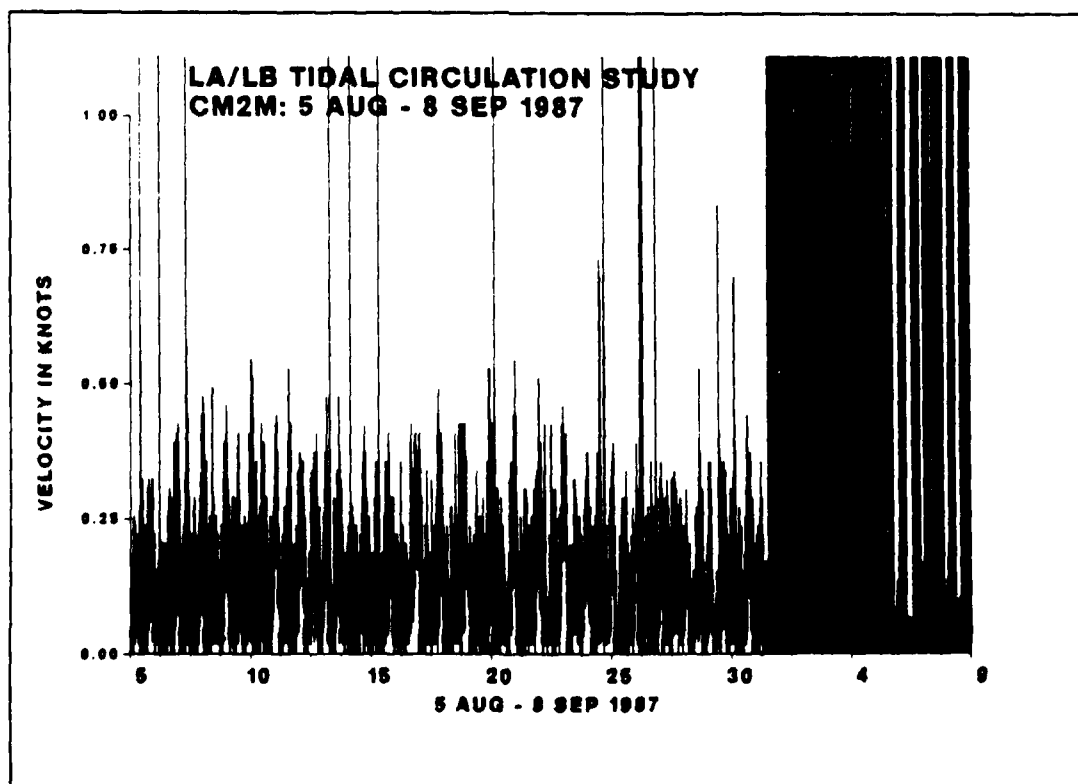
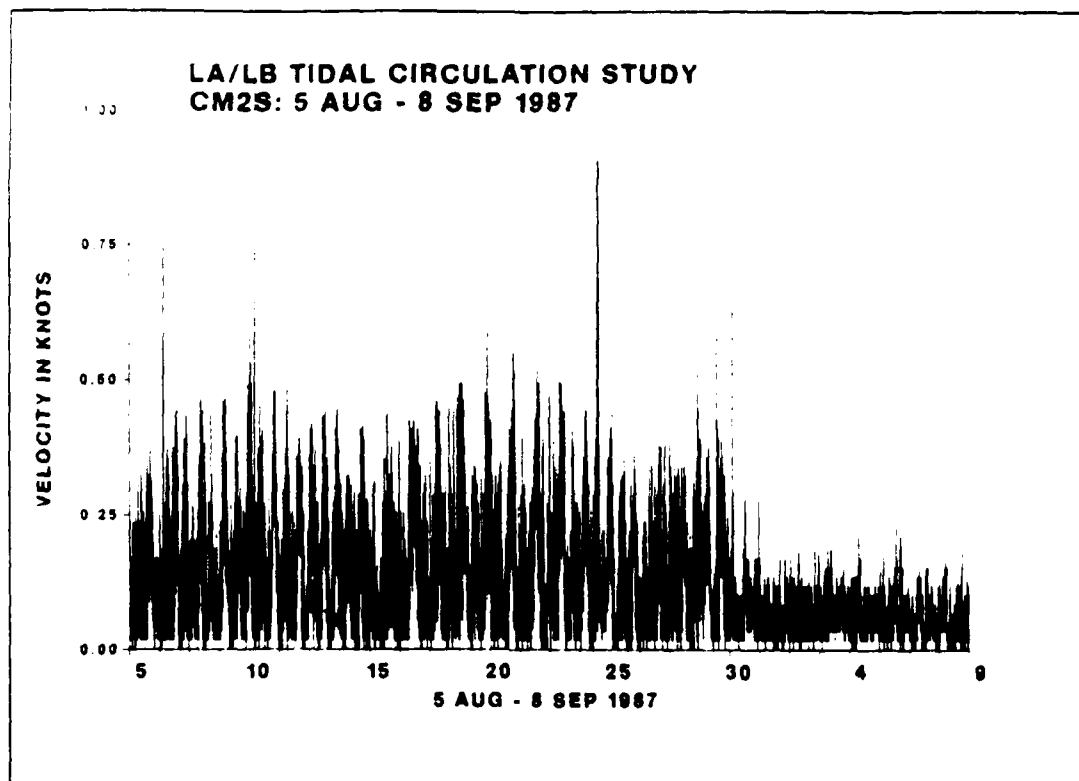


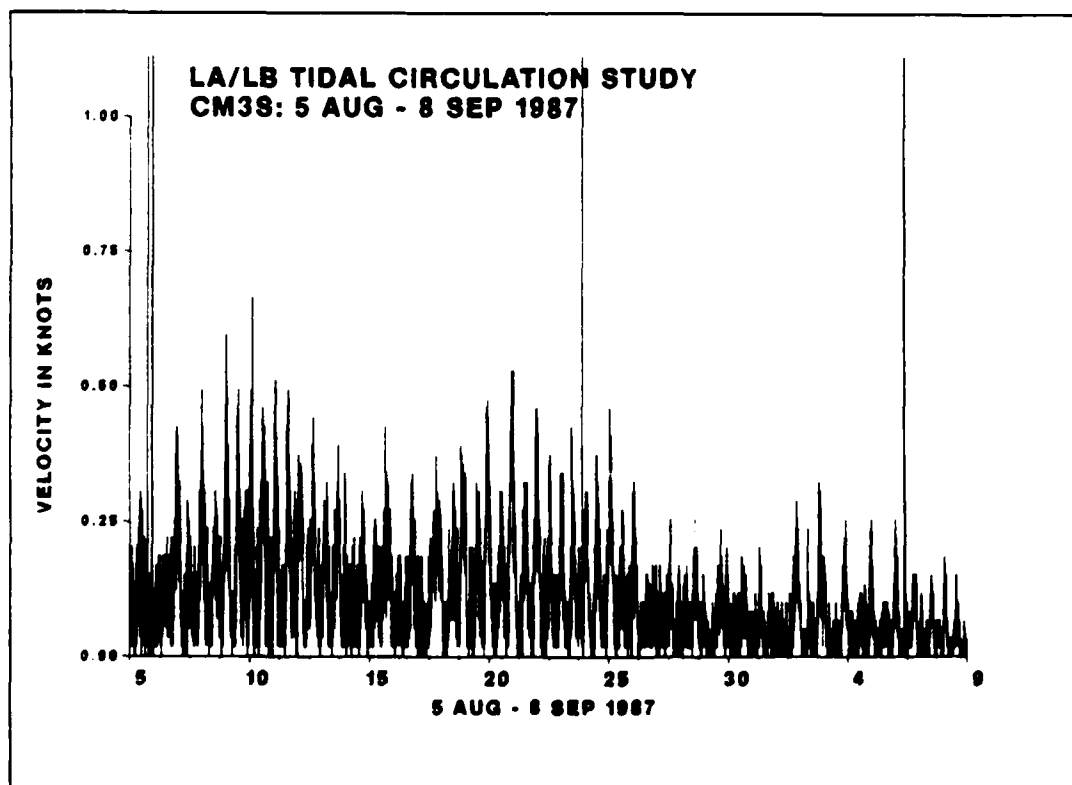
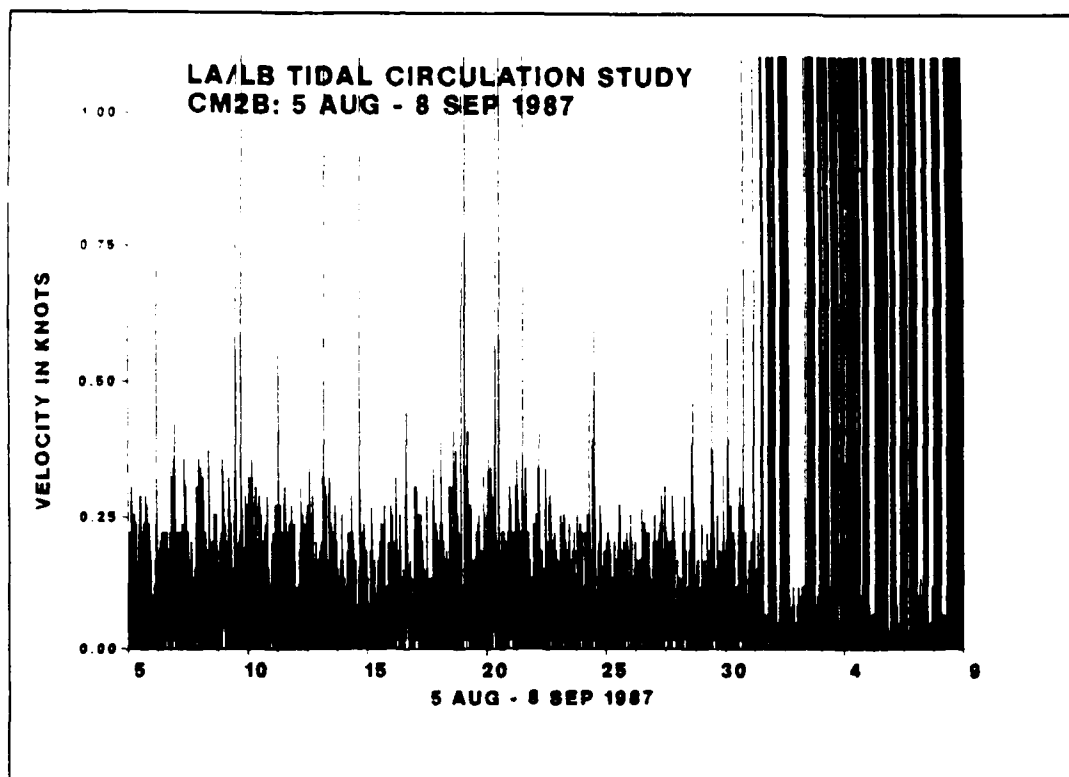


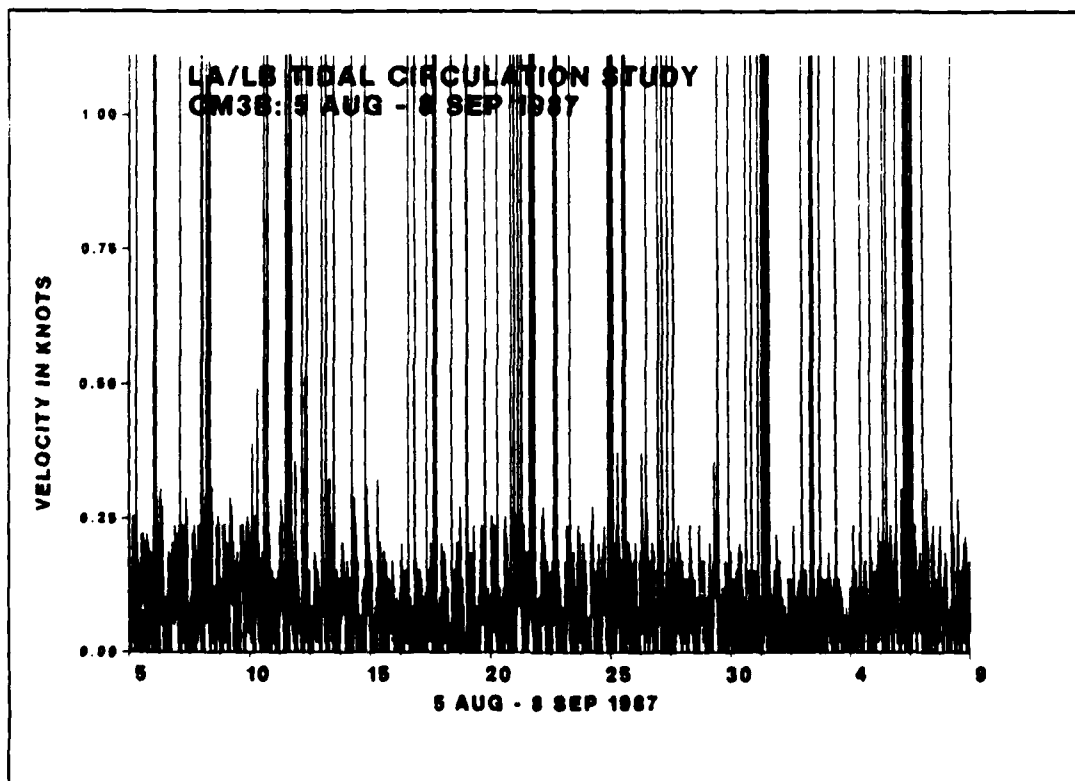
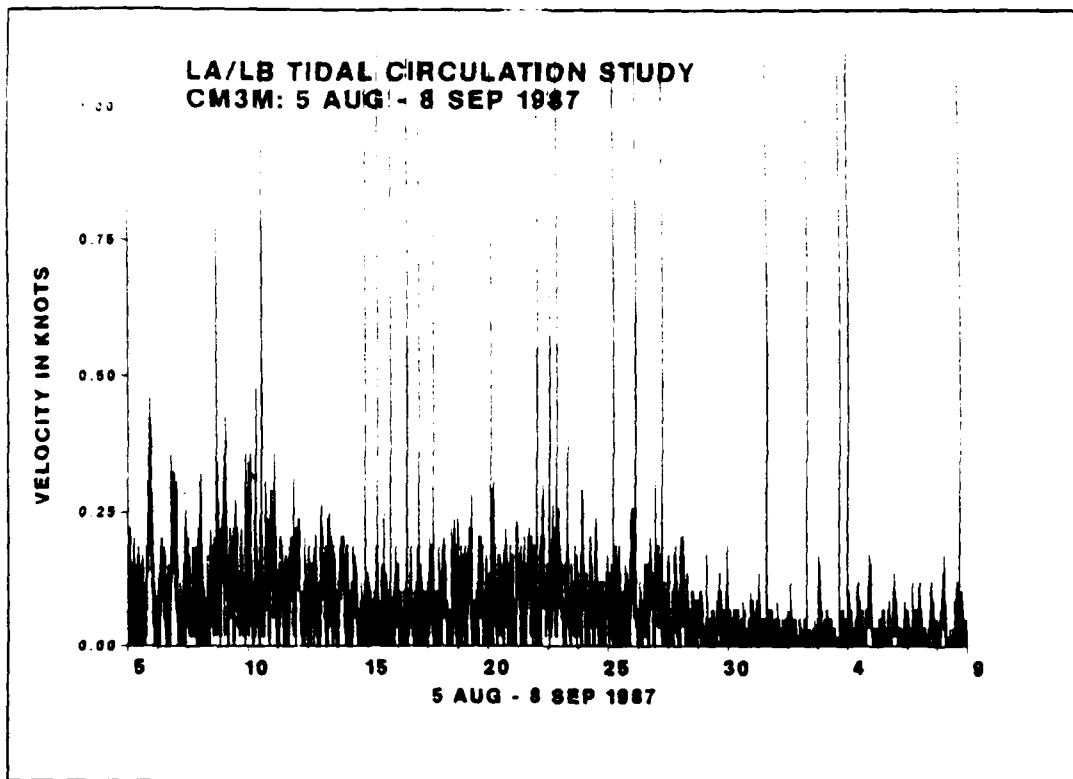
APPENDIX F: CURRENT VELOCITY TIME SERIES PLOTS

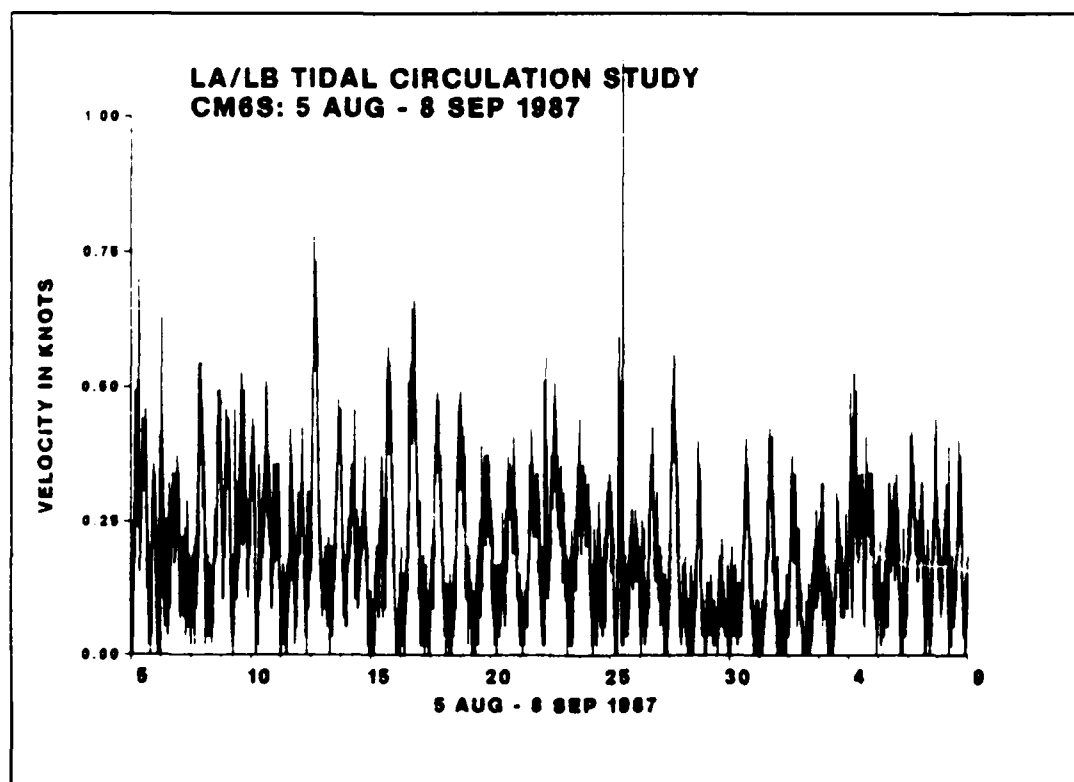
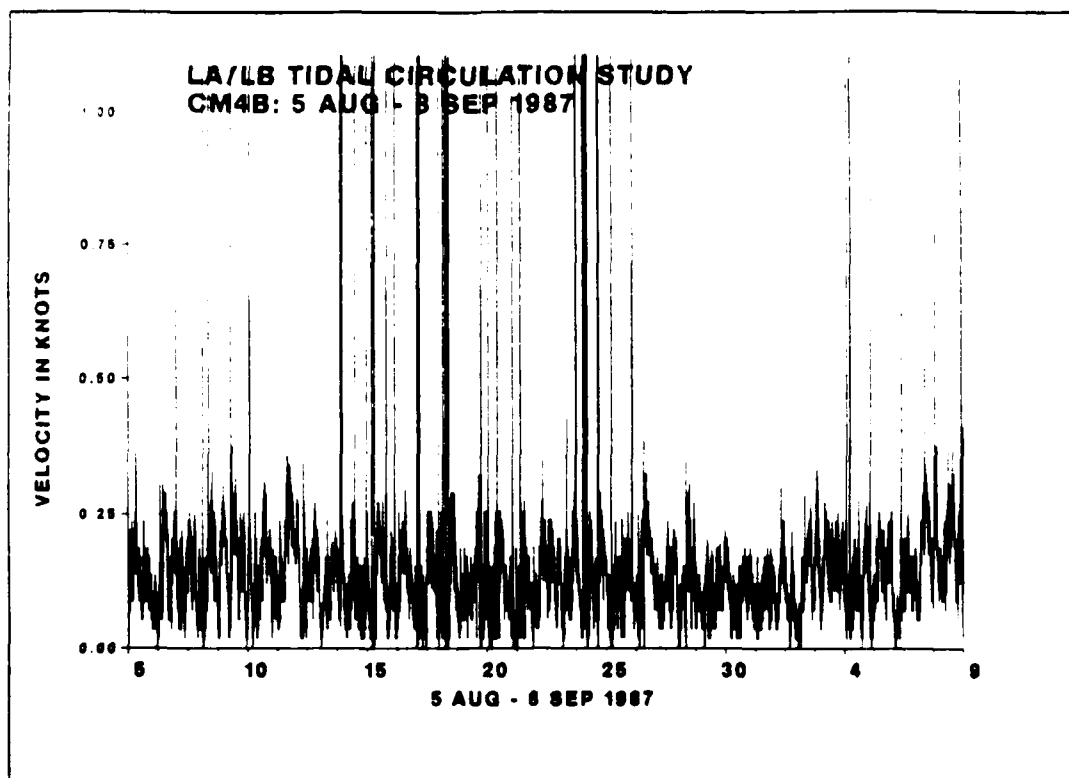
This appendix contains plots of current velocity time series. Time series are suffixed with S, M, and B, which stand for surface, middepth, and bottom, respectively.

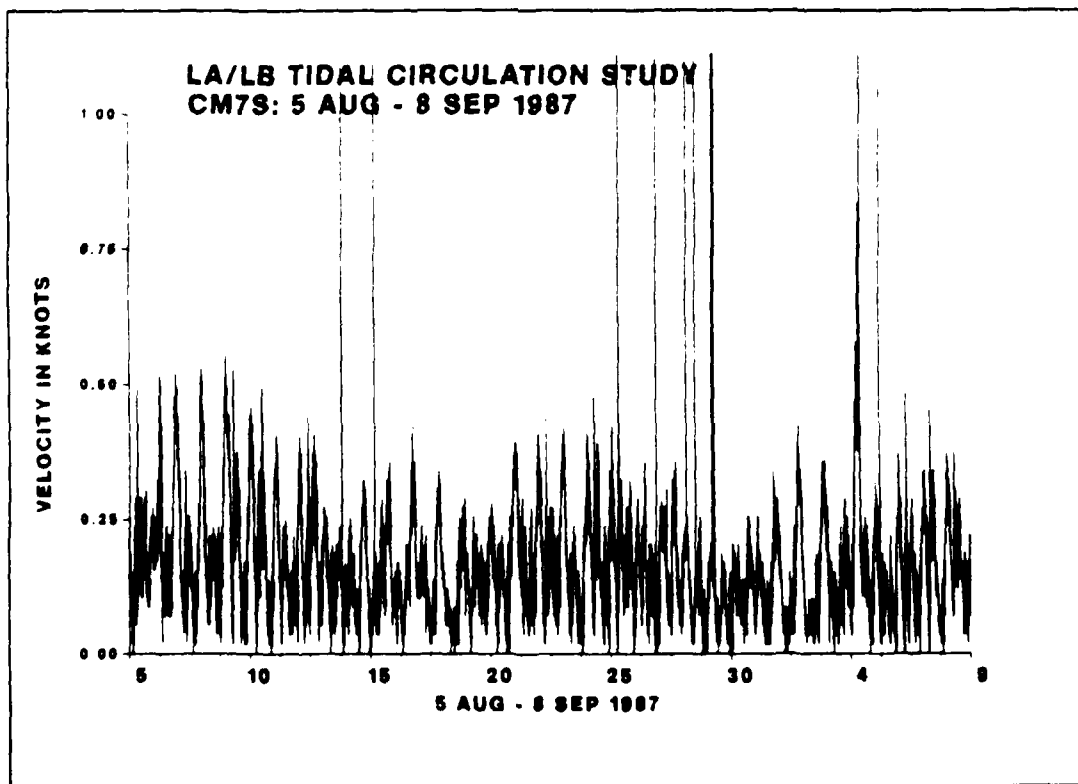
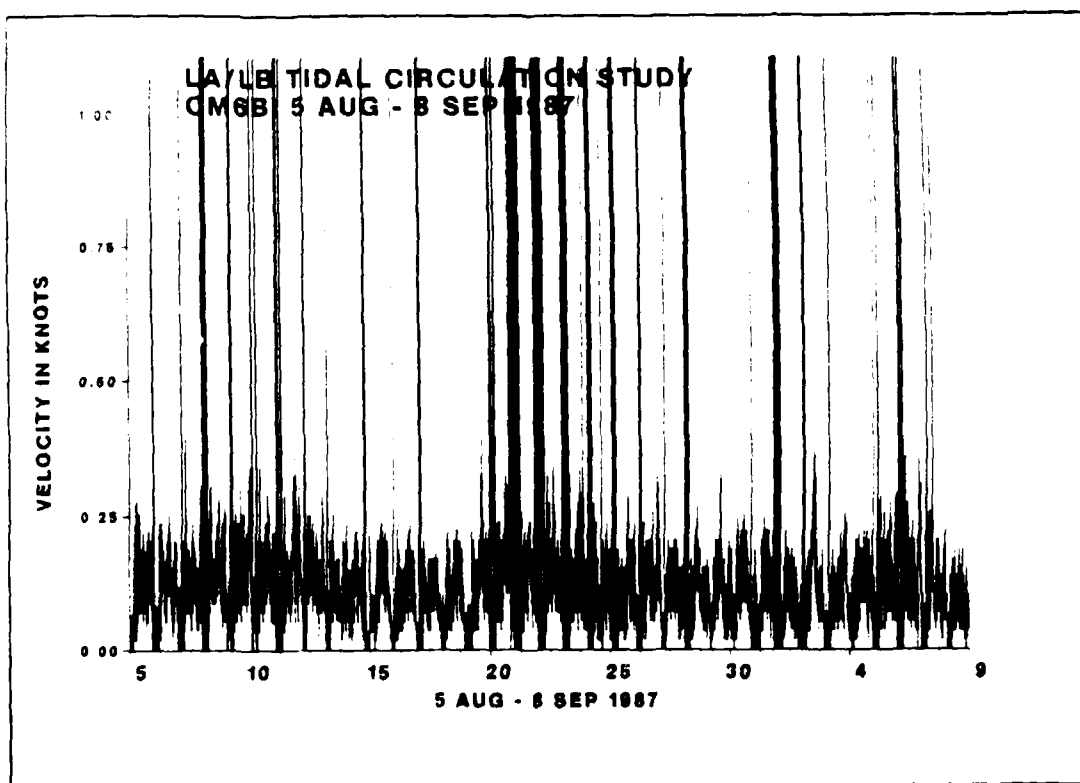


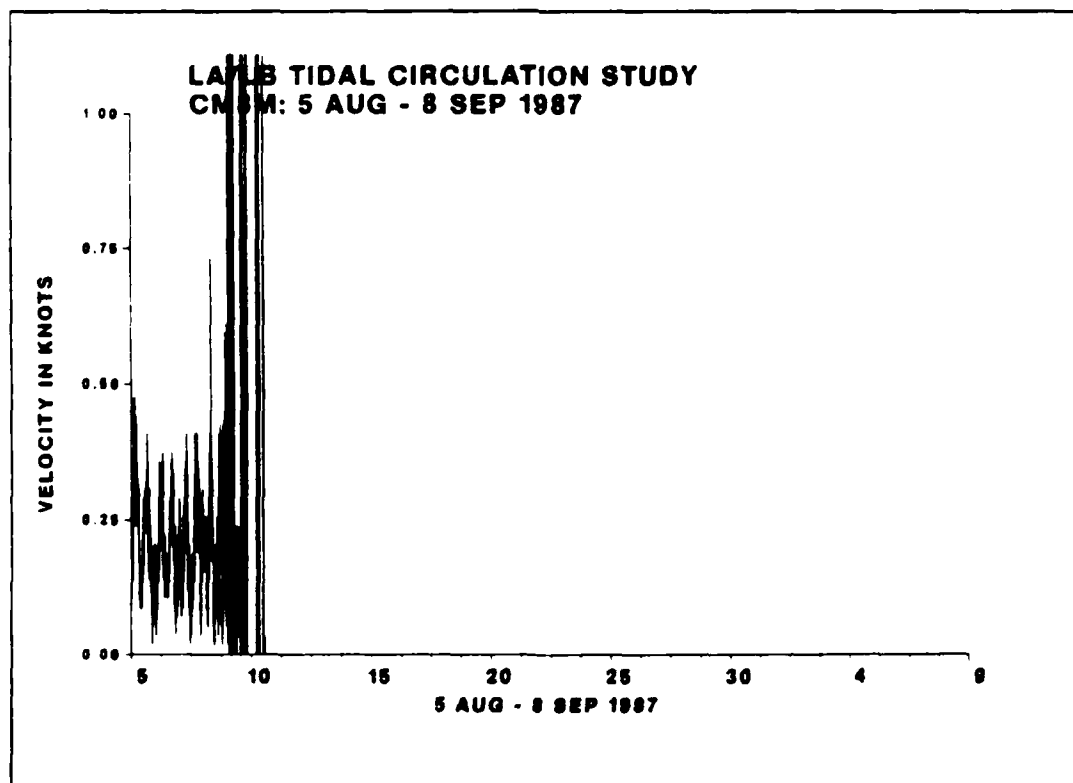
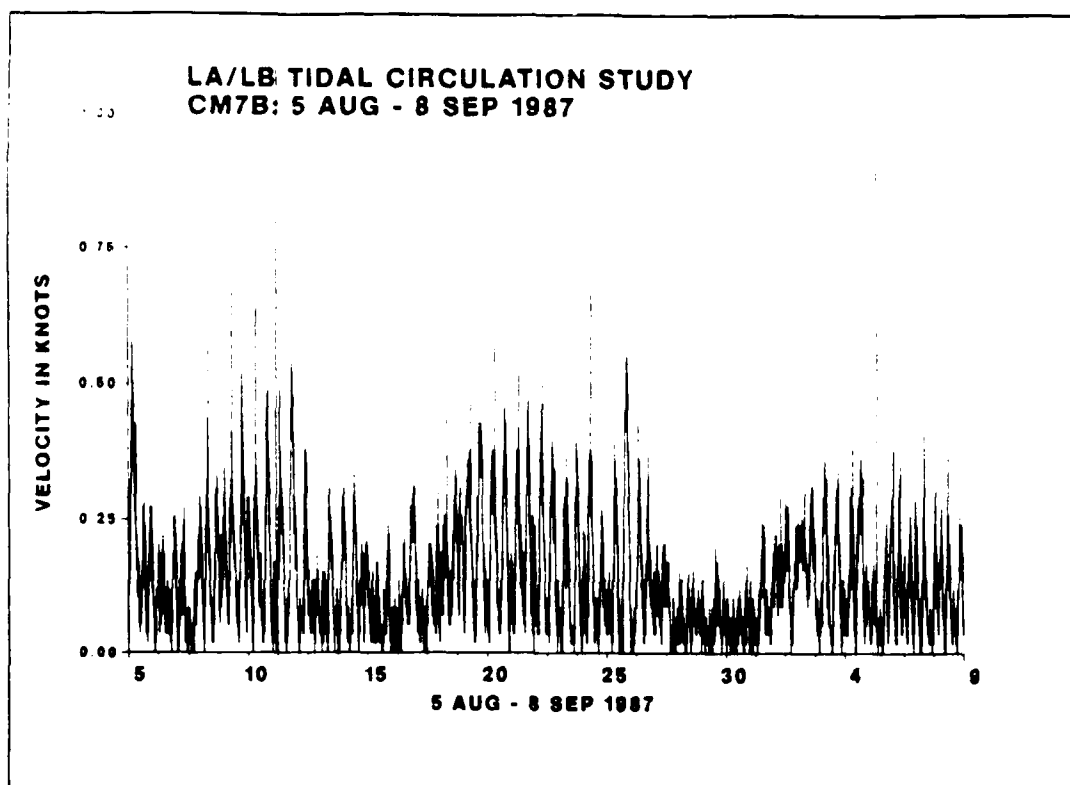


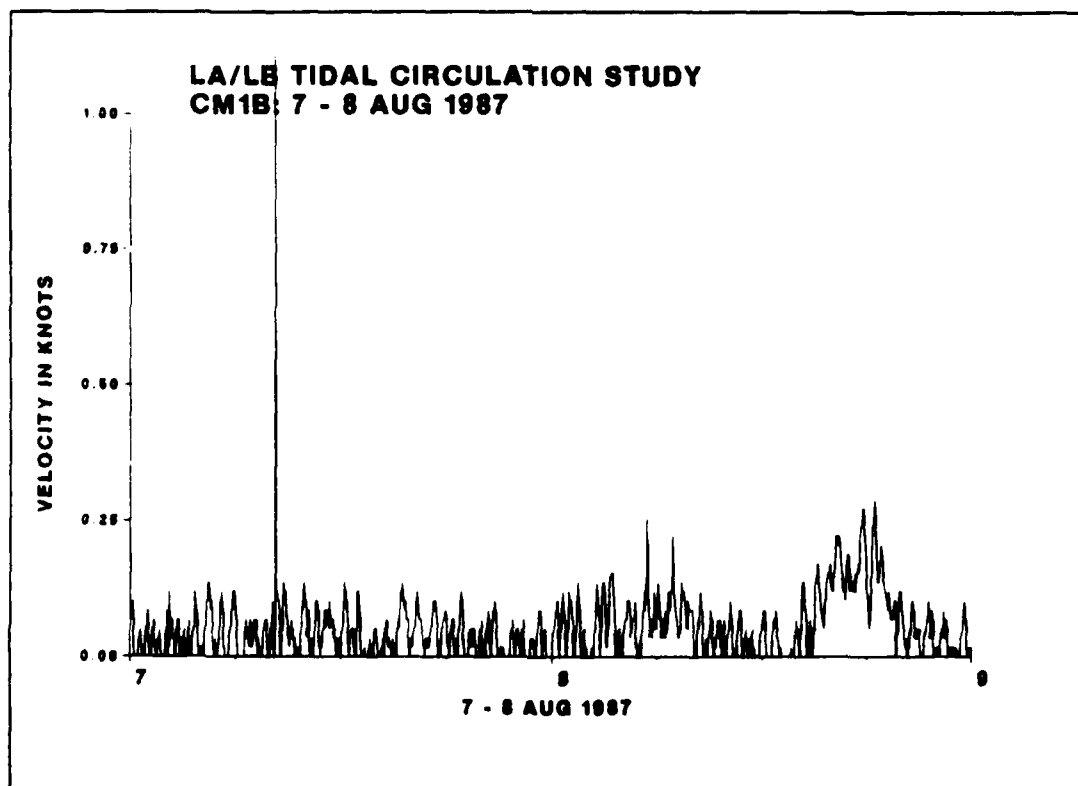
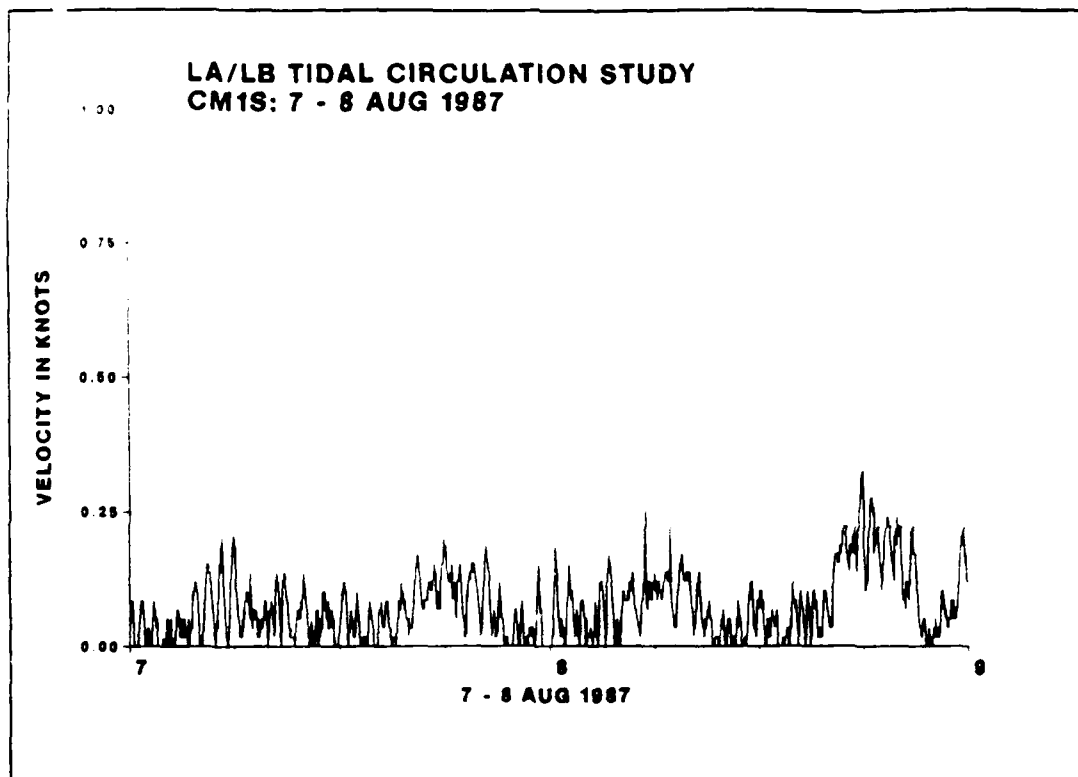


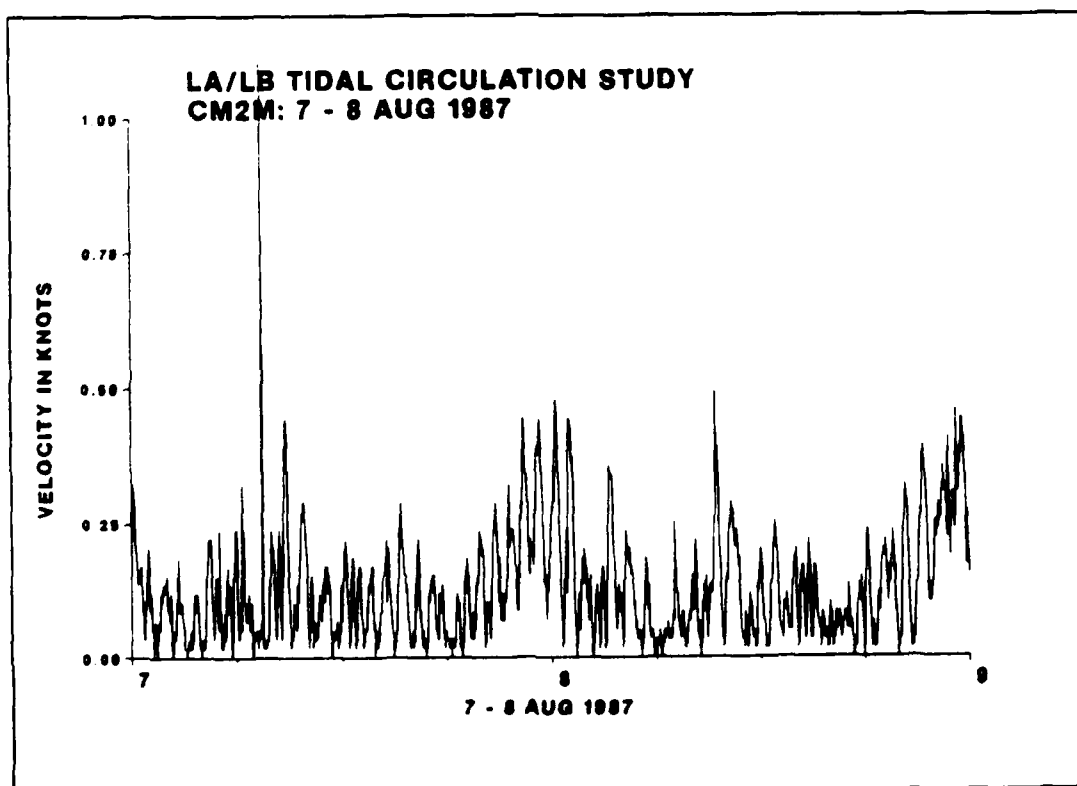
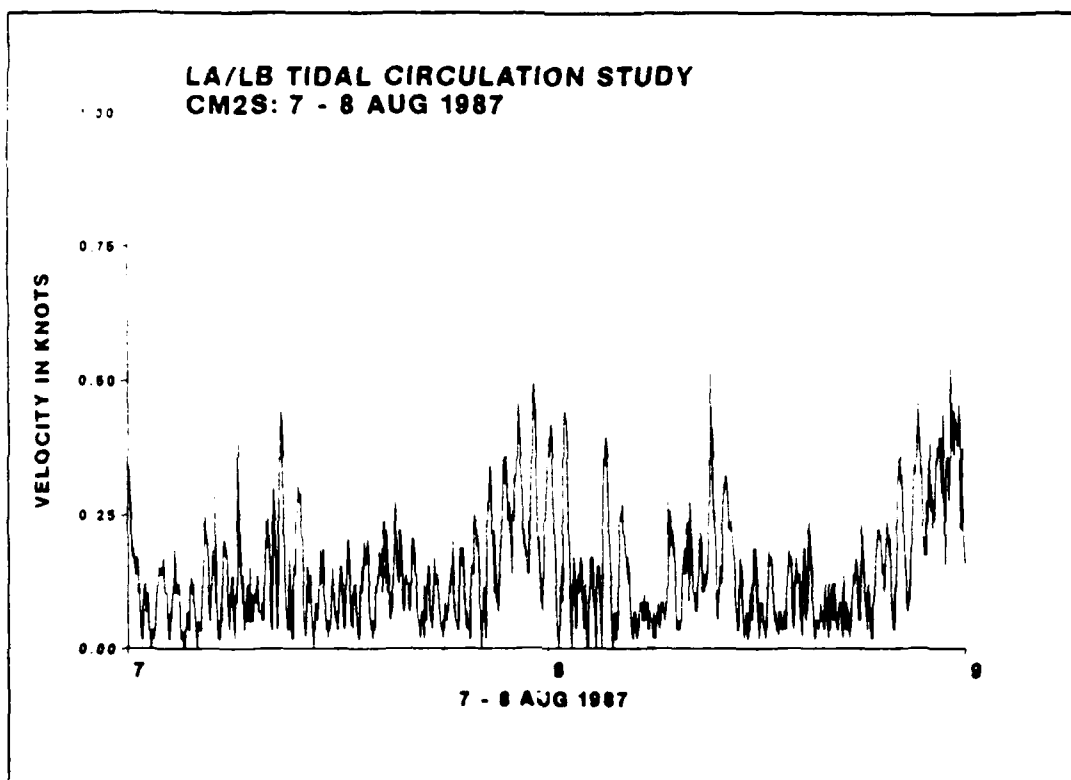


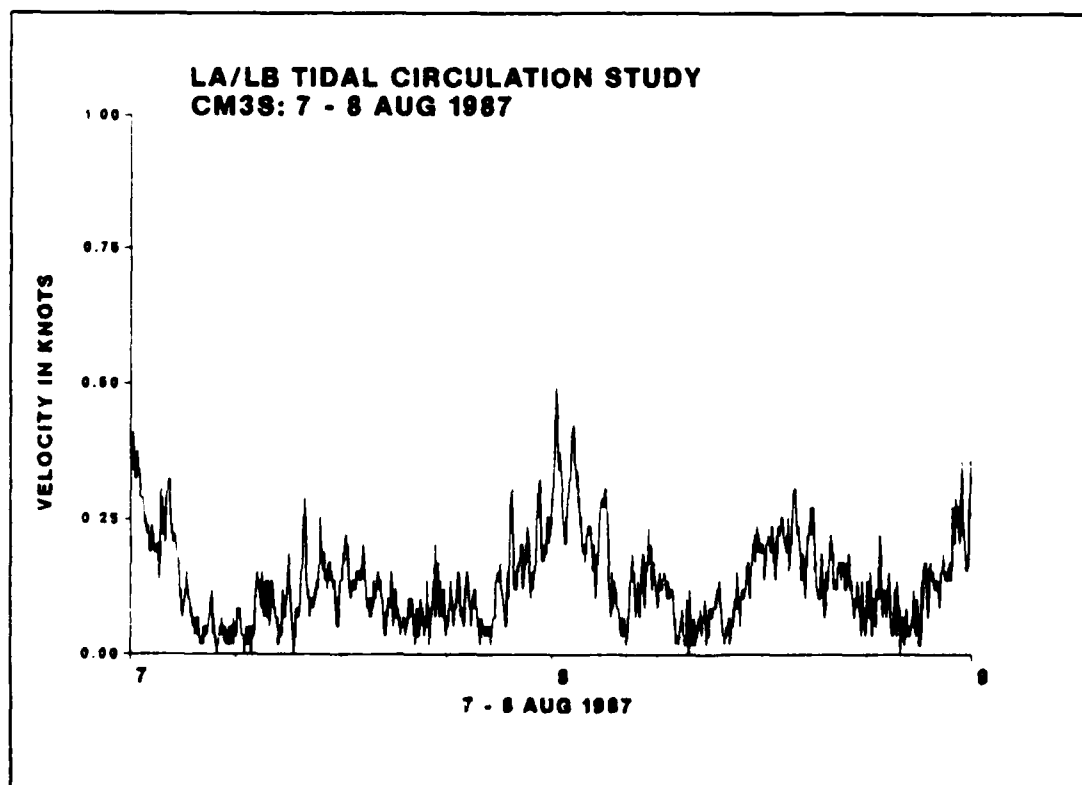
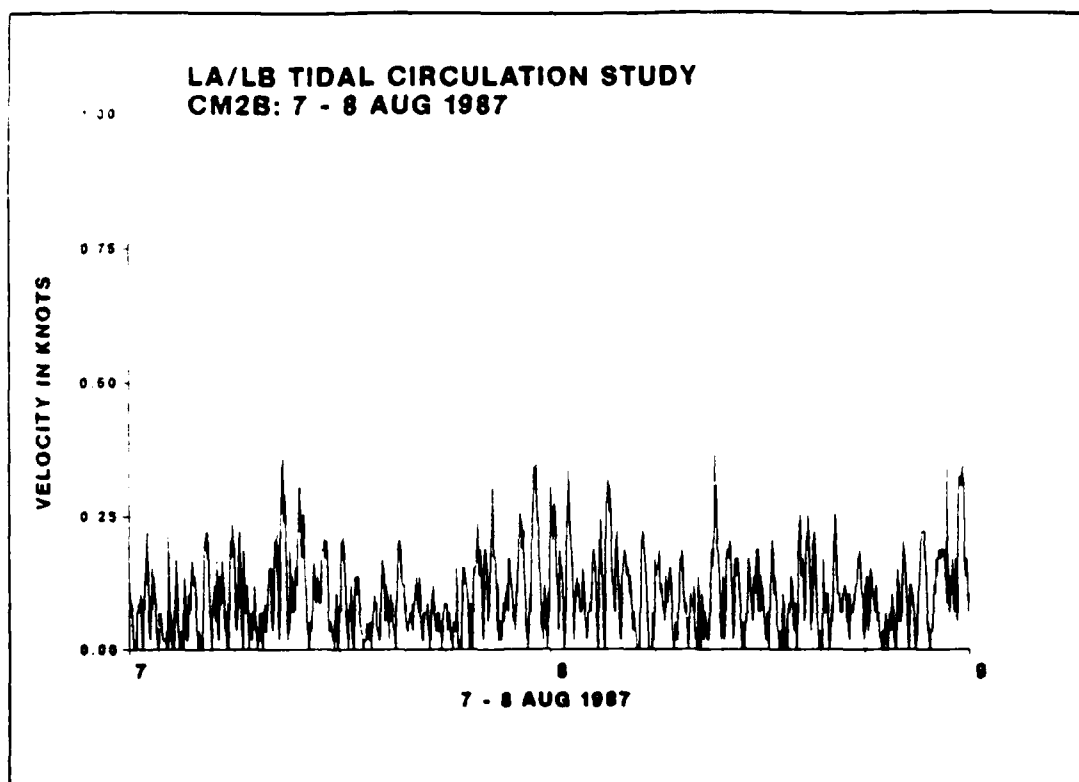


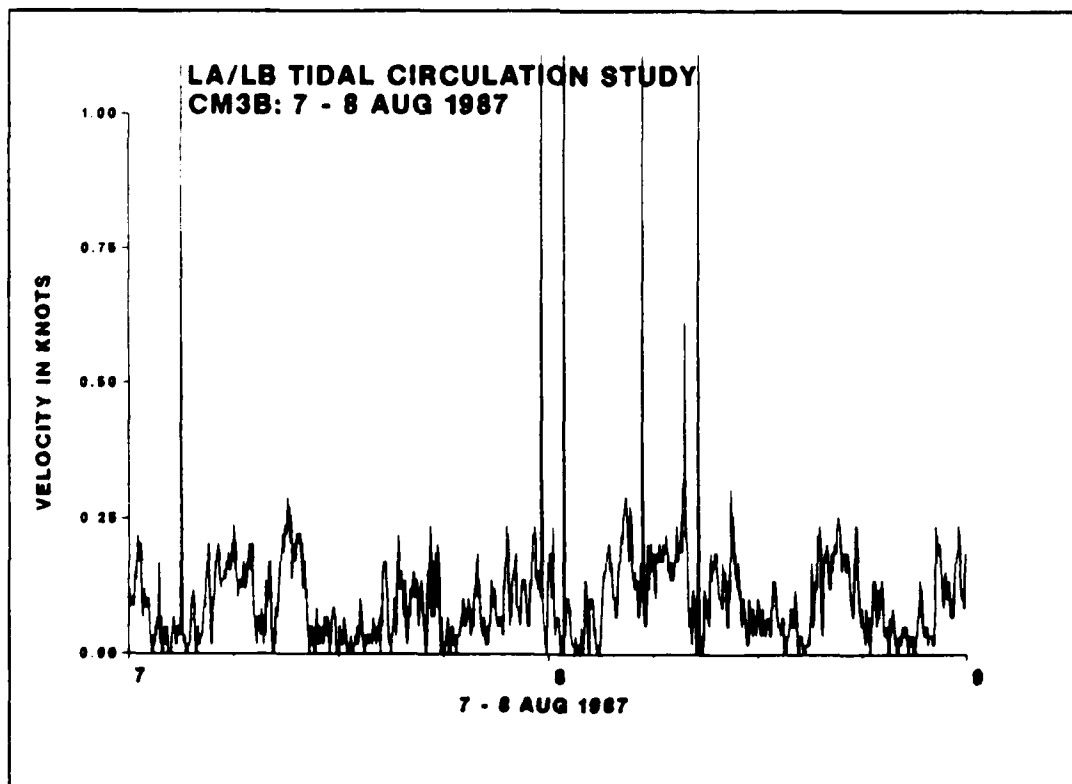
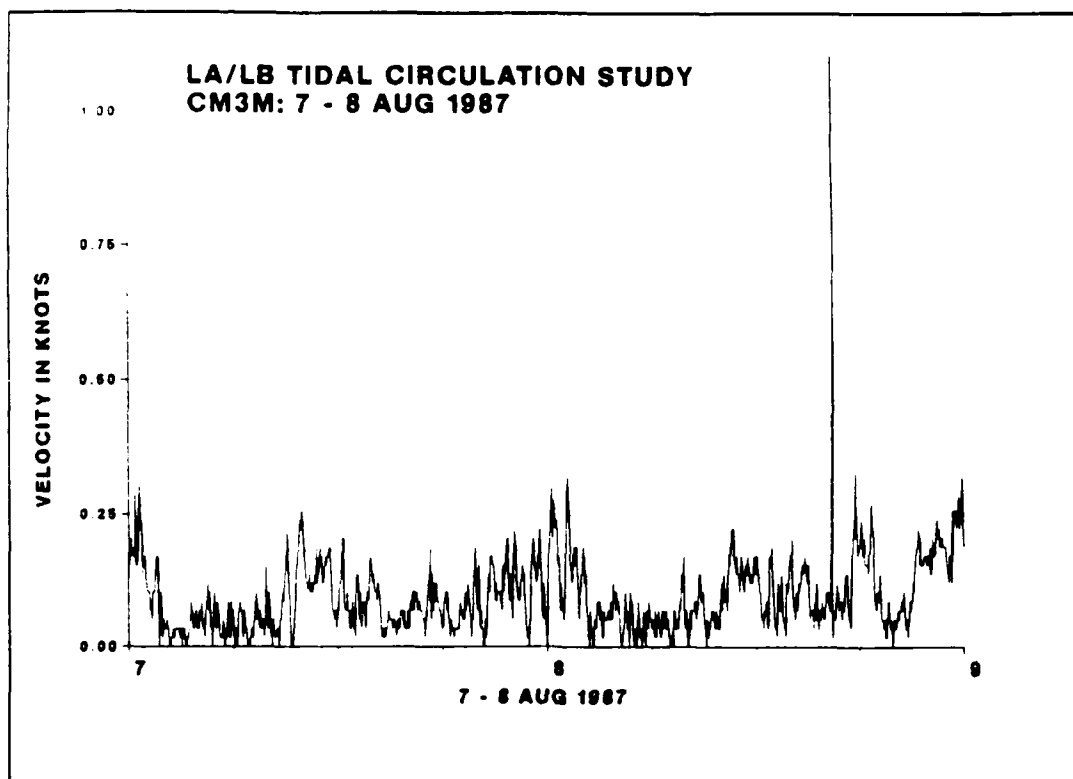


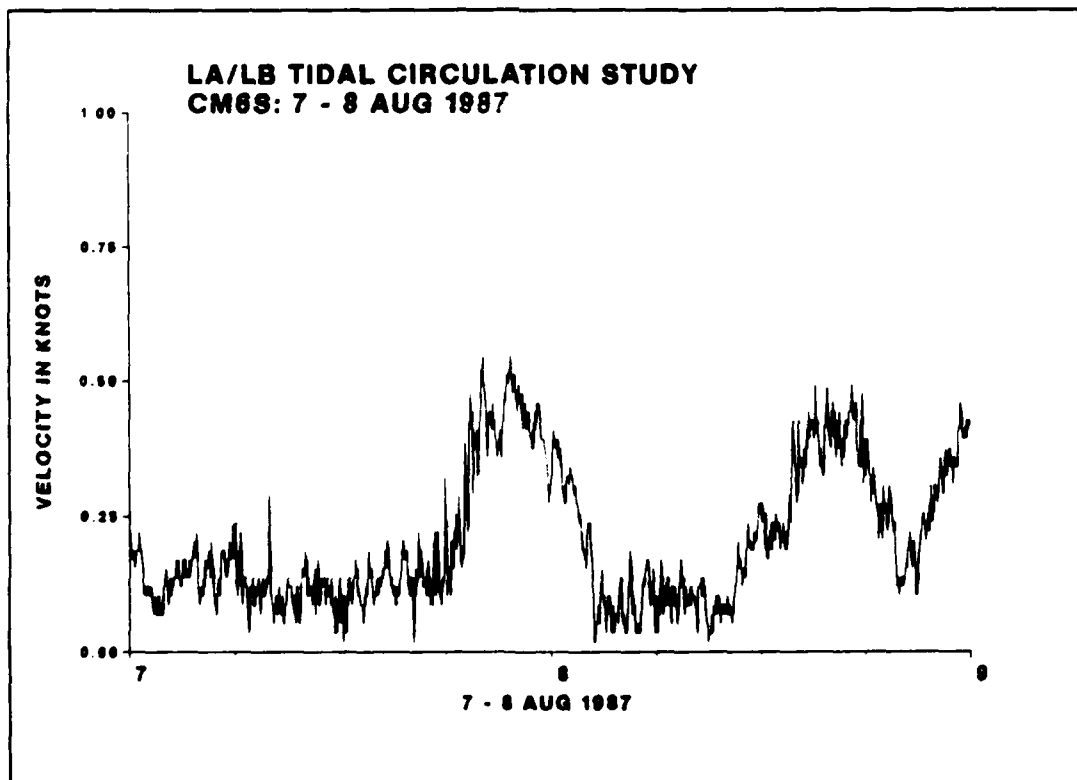
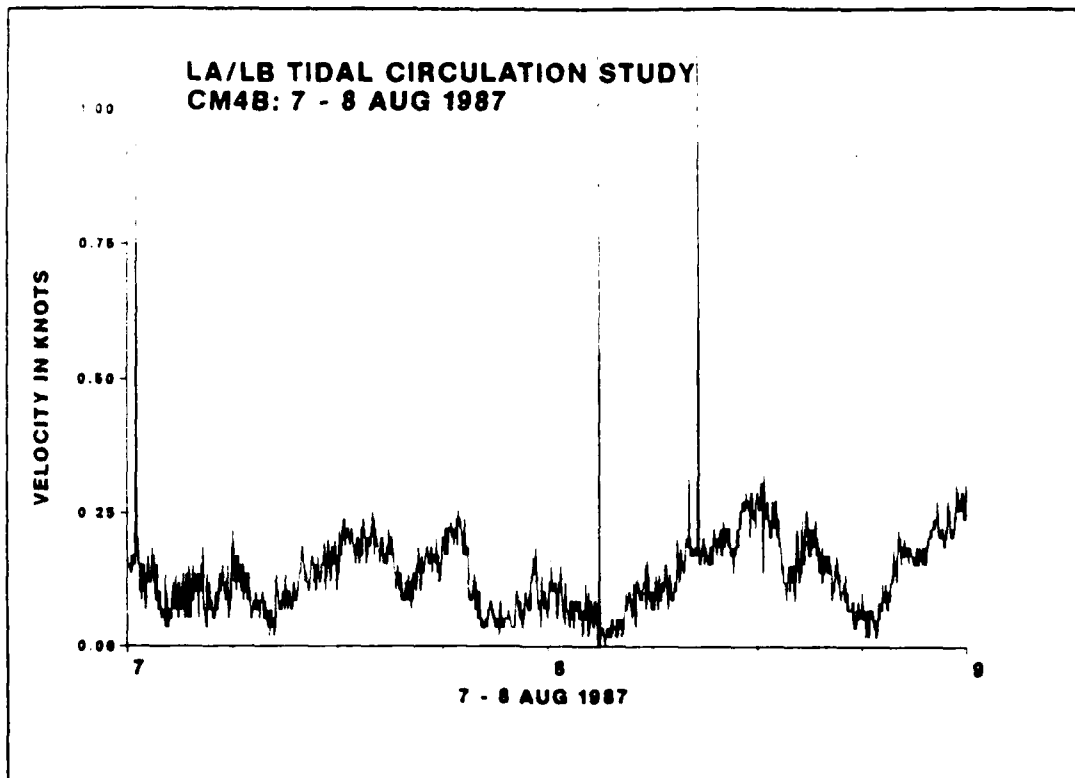


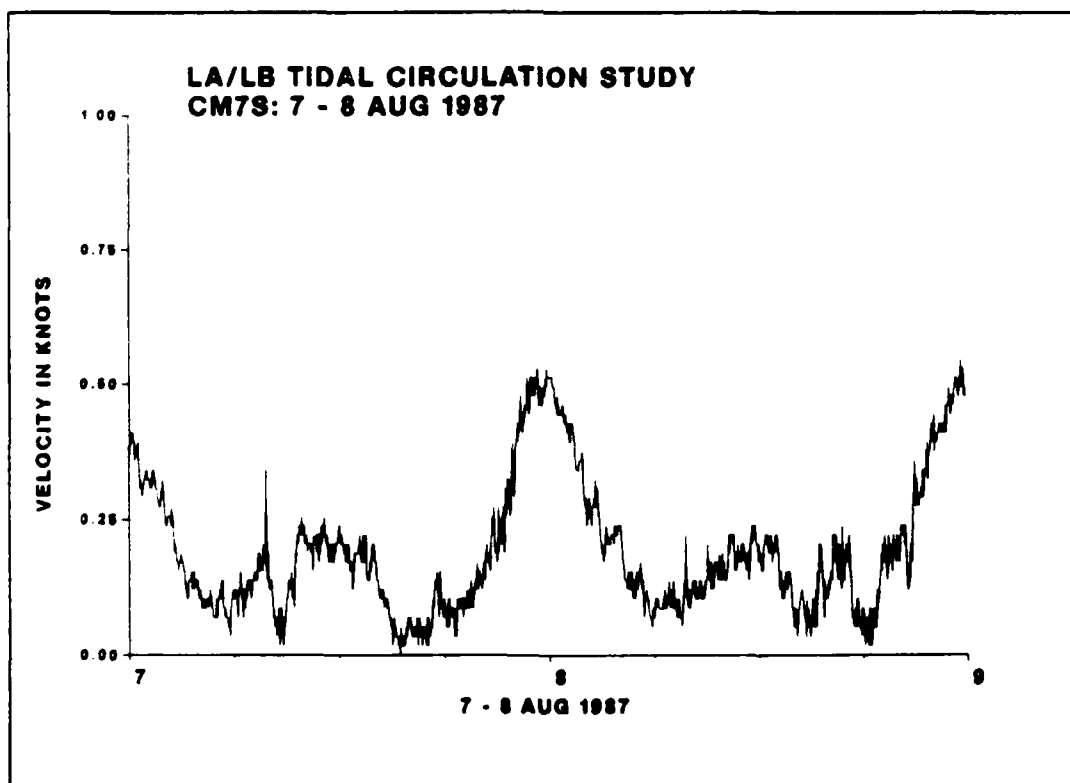
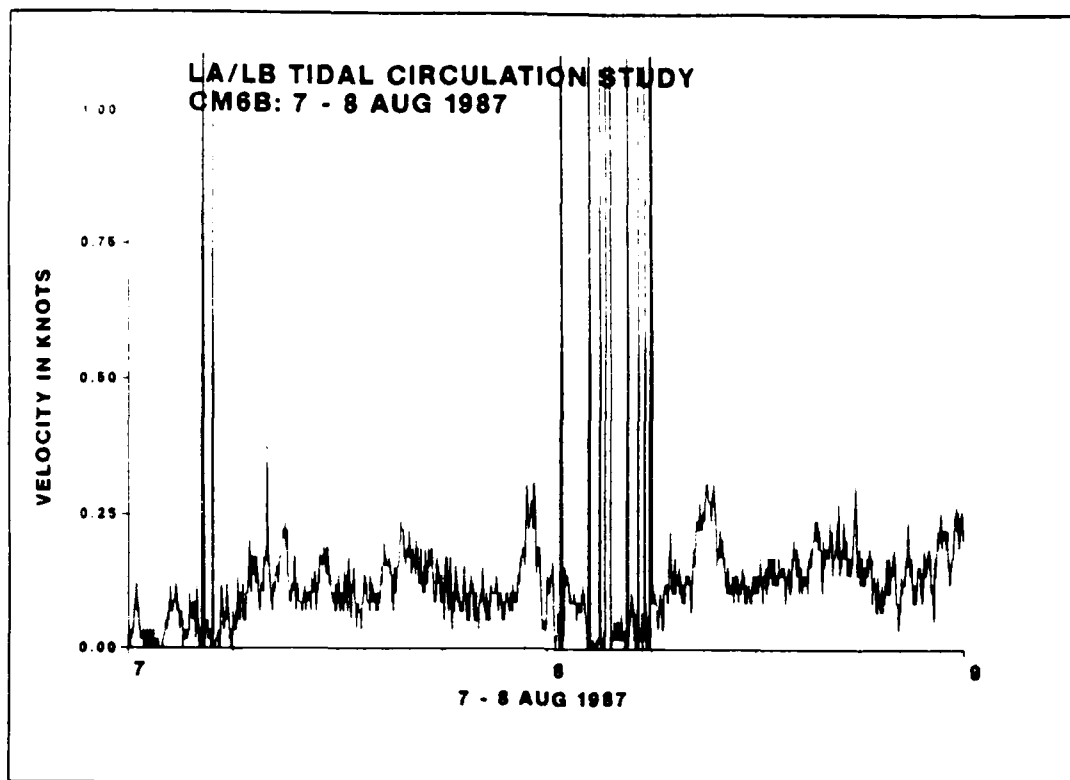


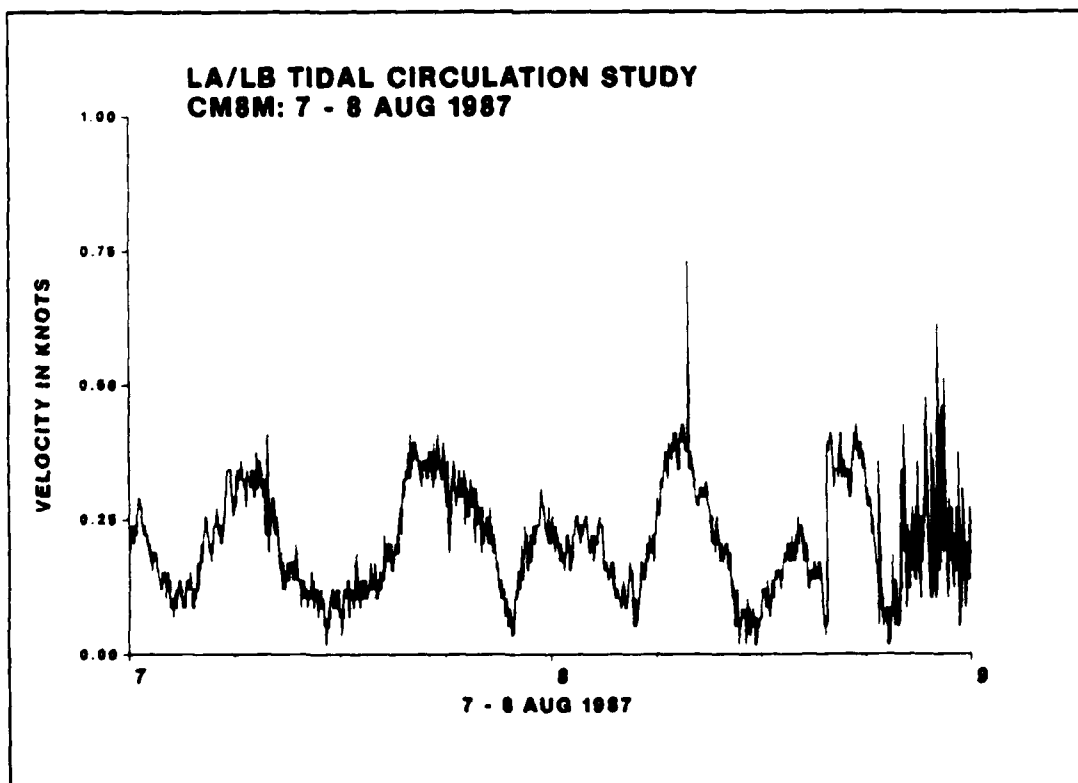
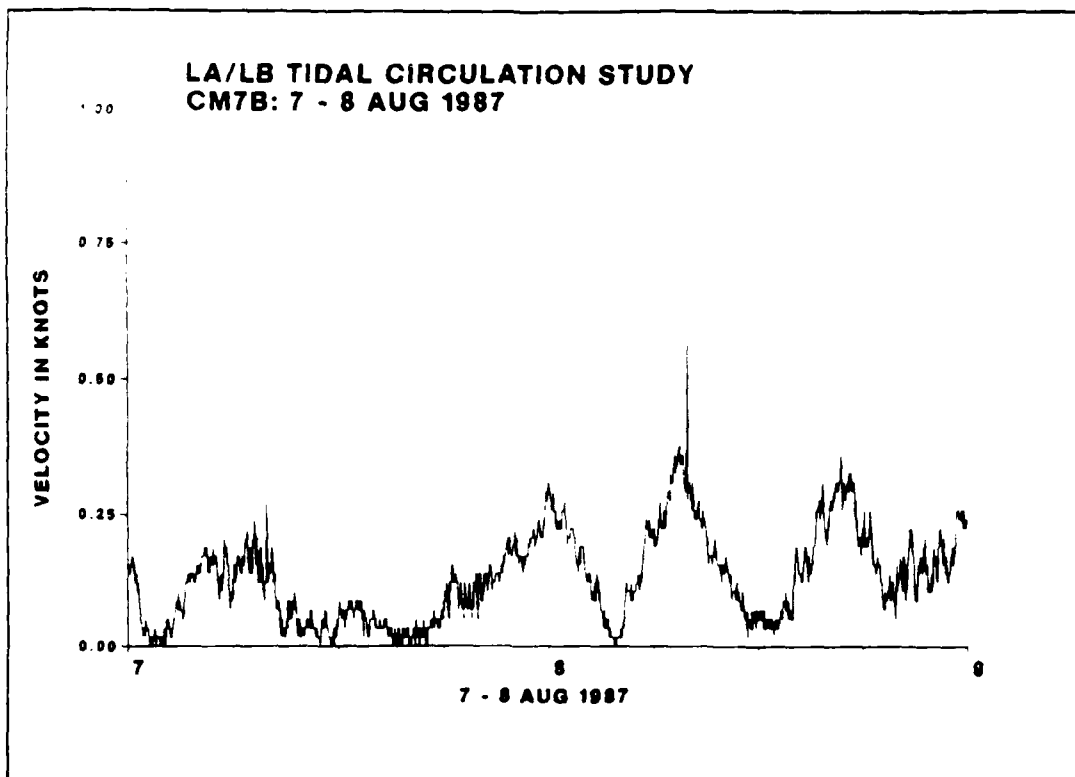


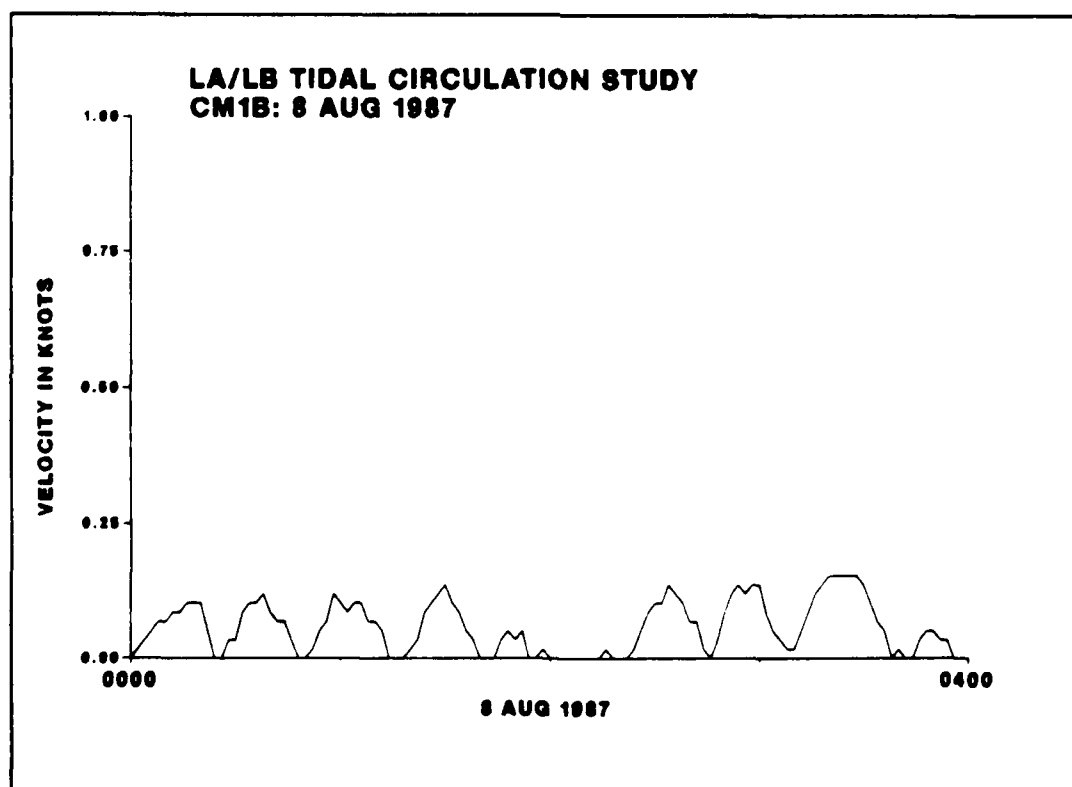
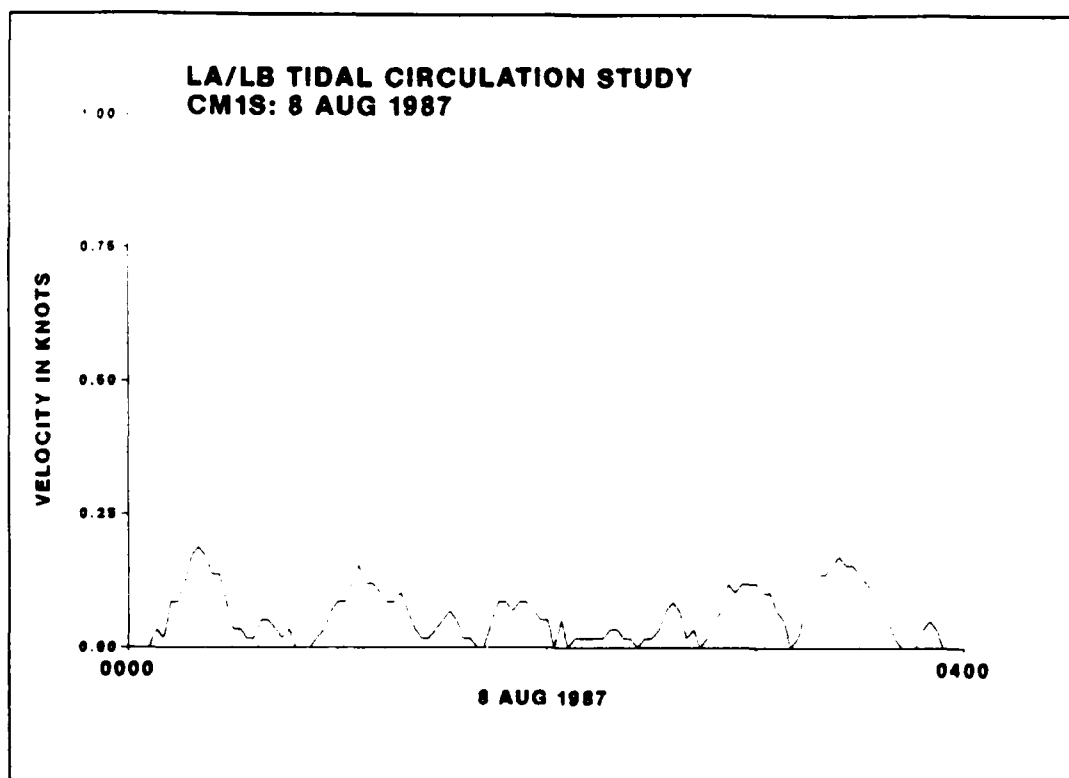


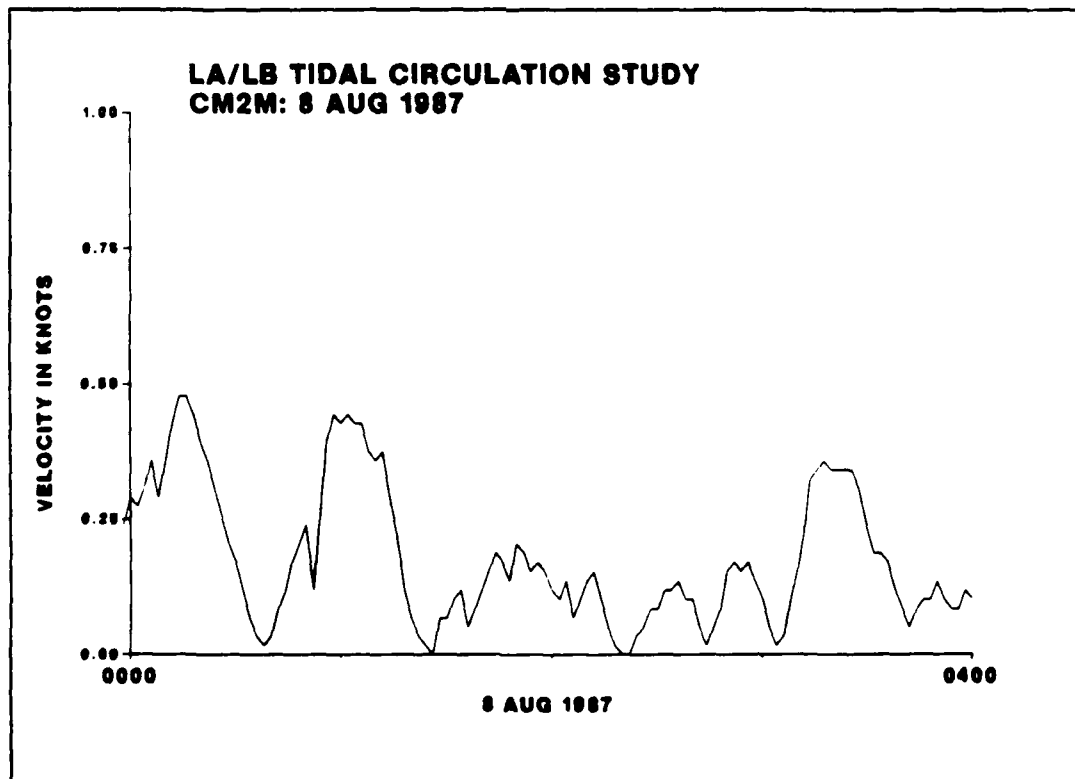
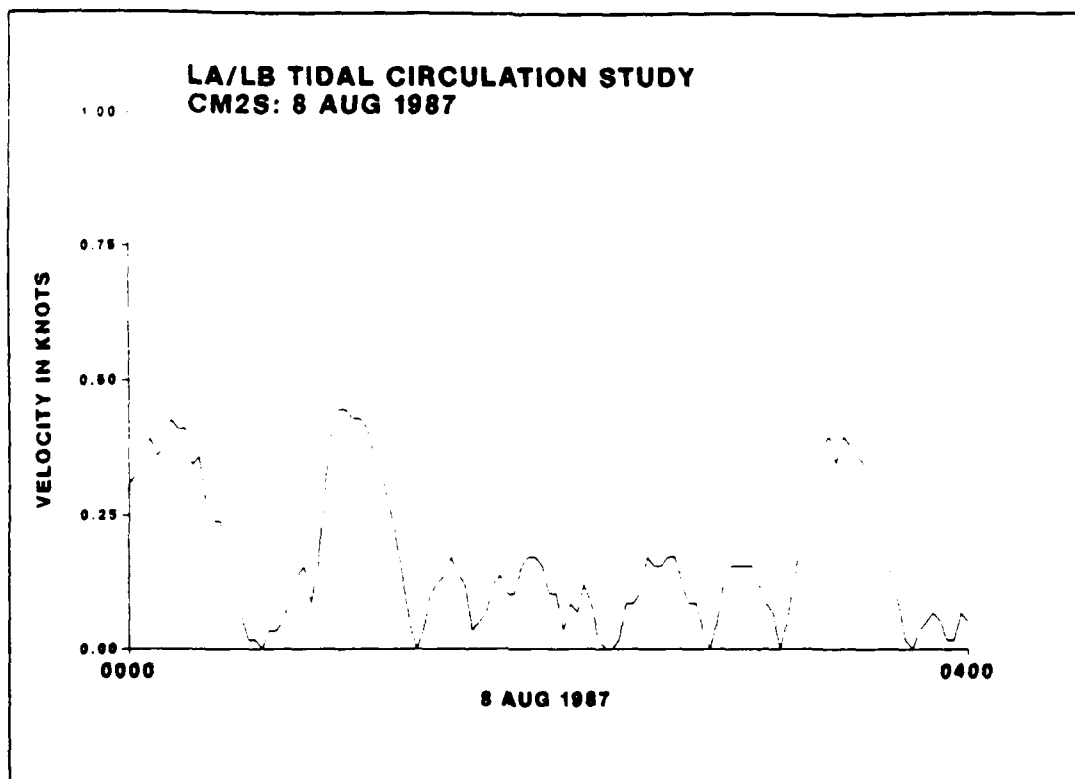


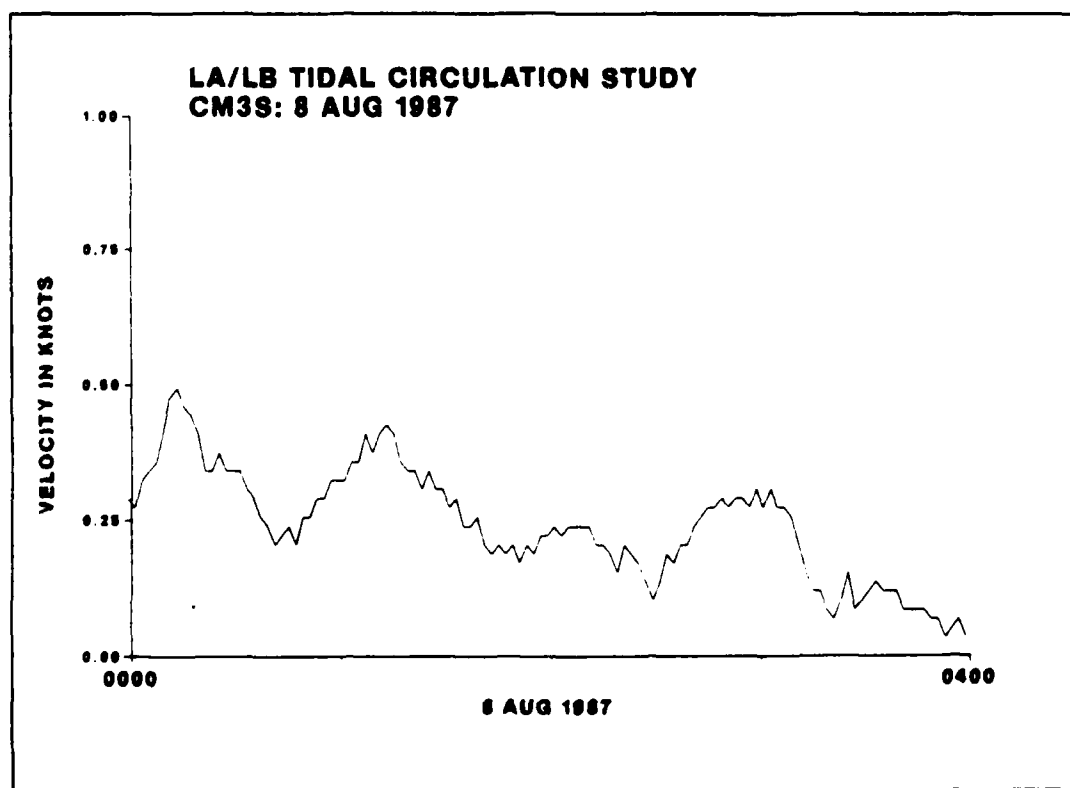
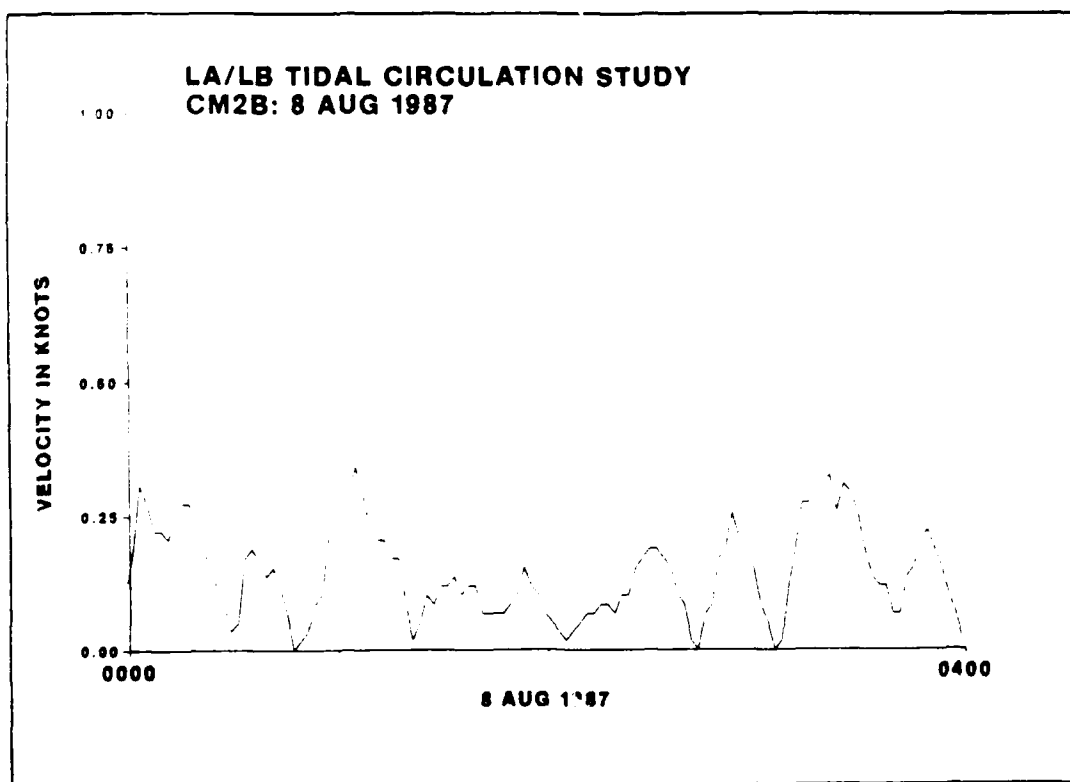


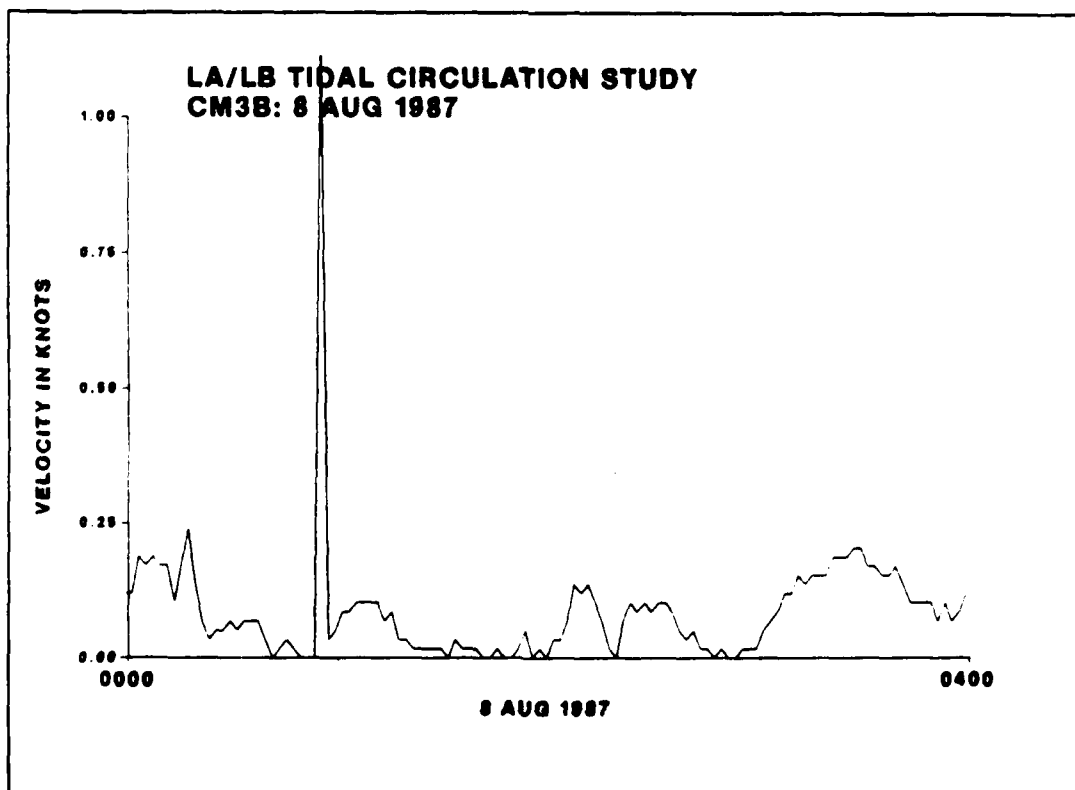
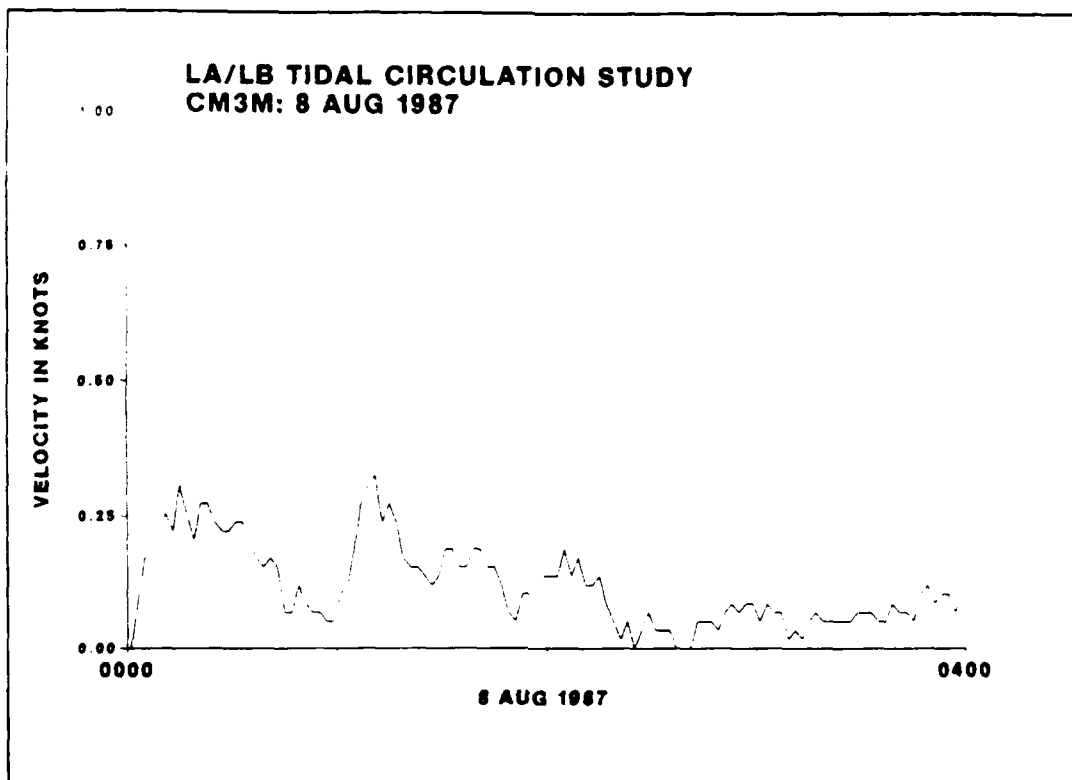


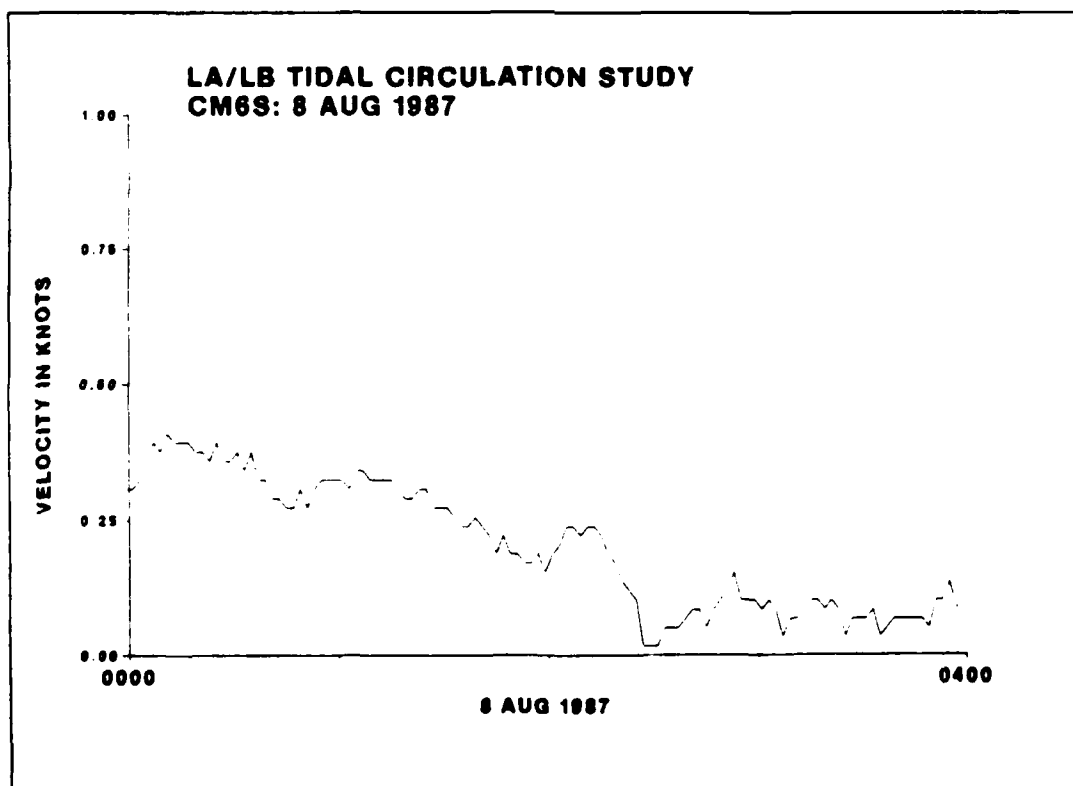
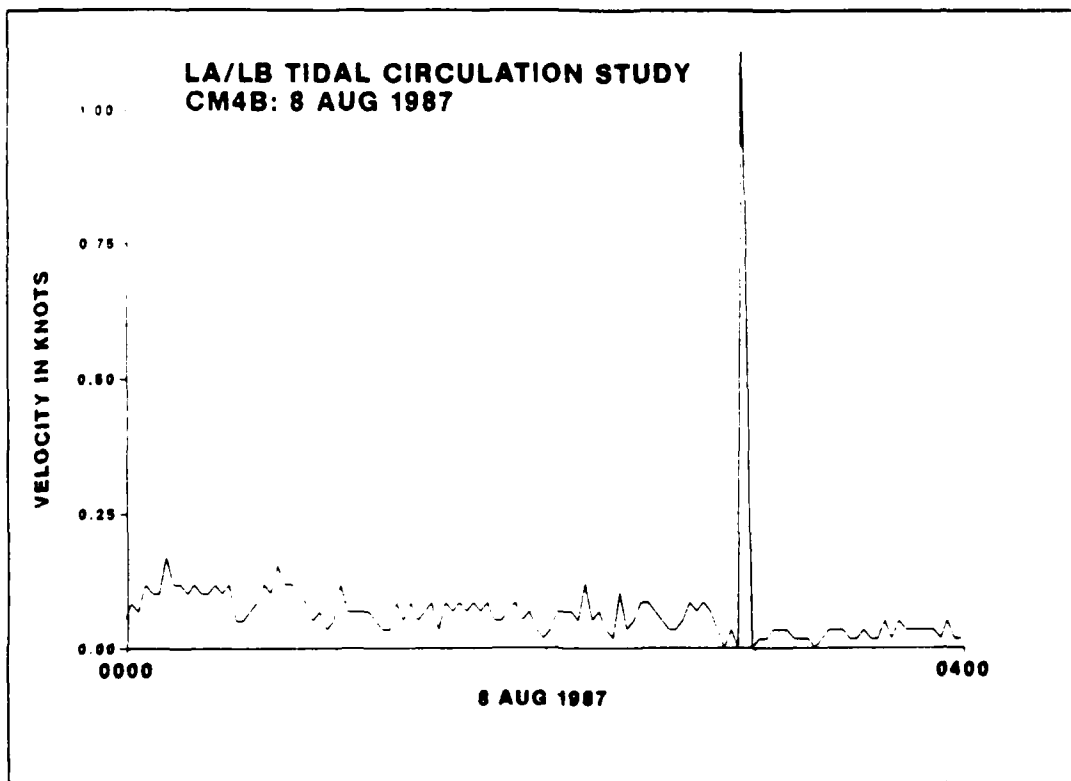


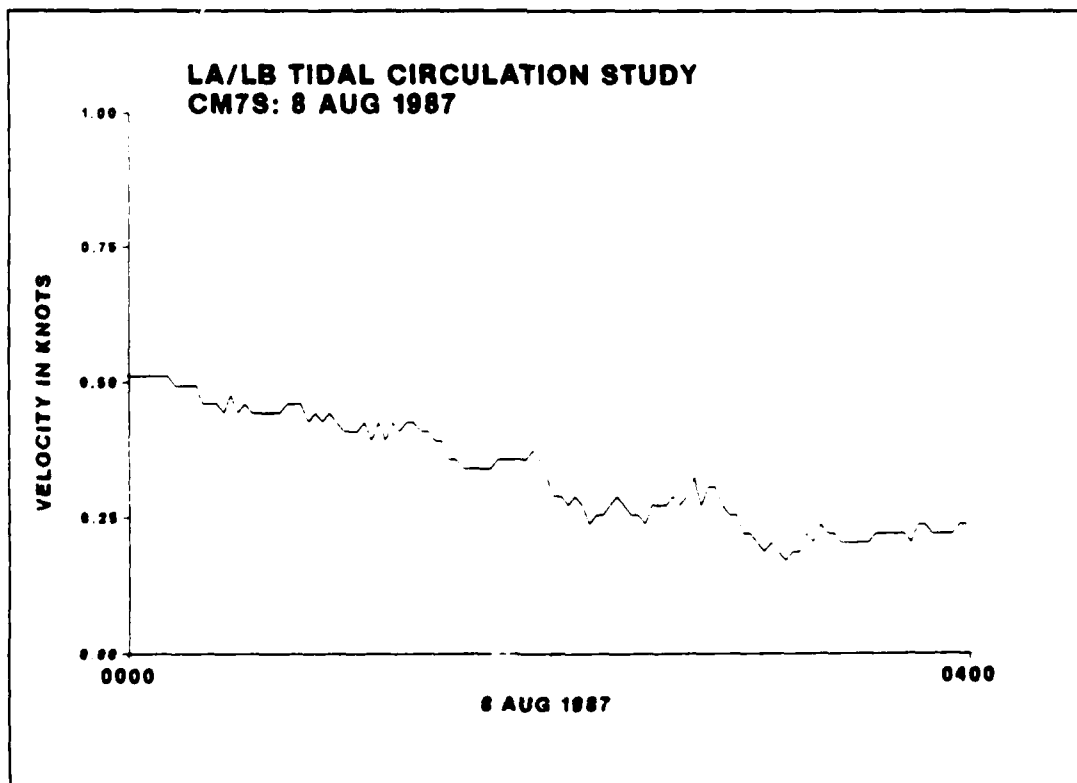
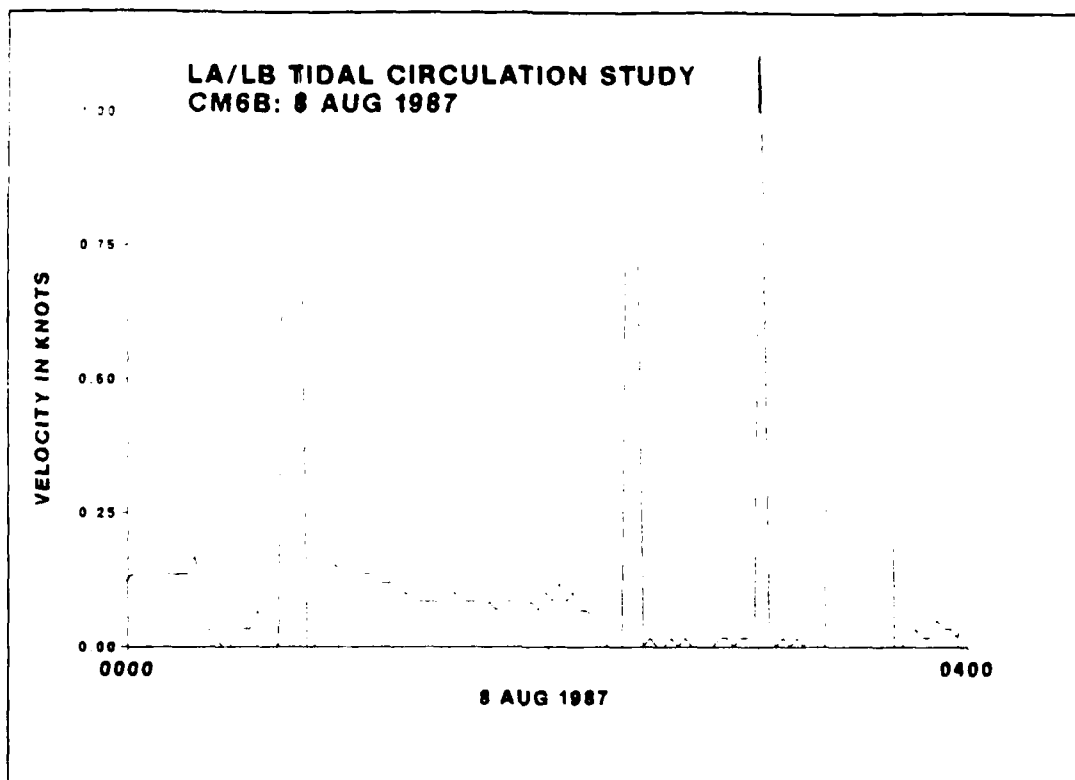


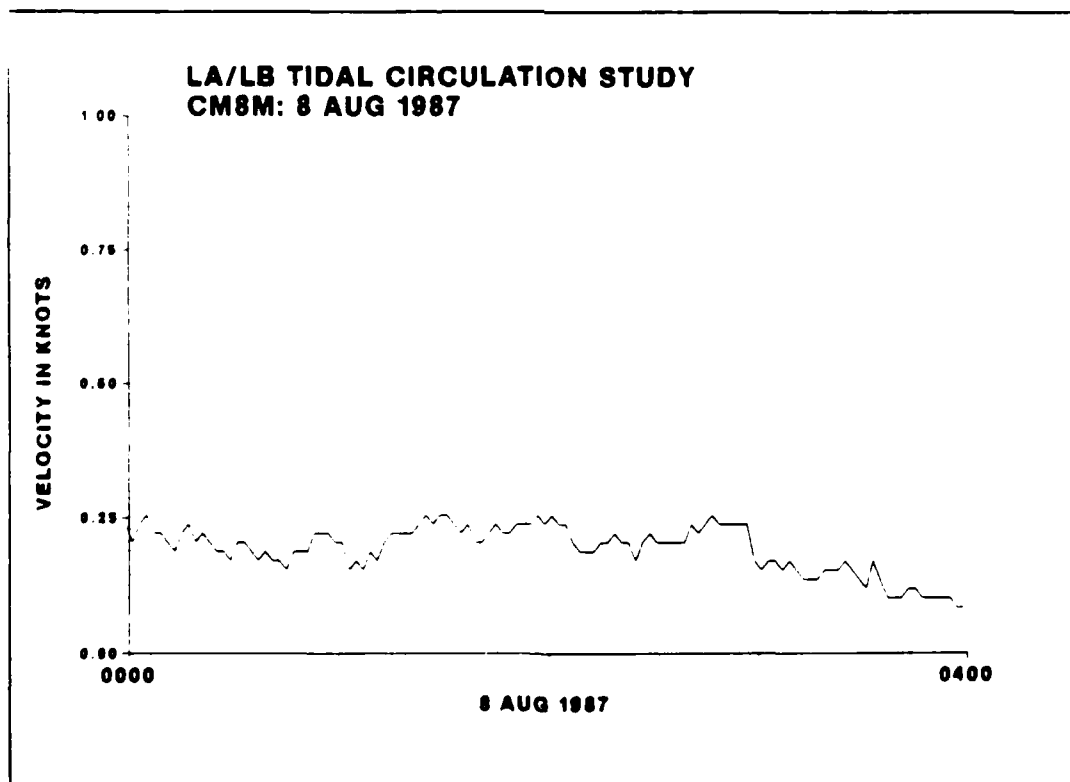
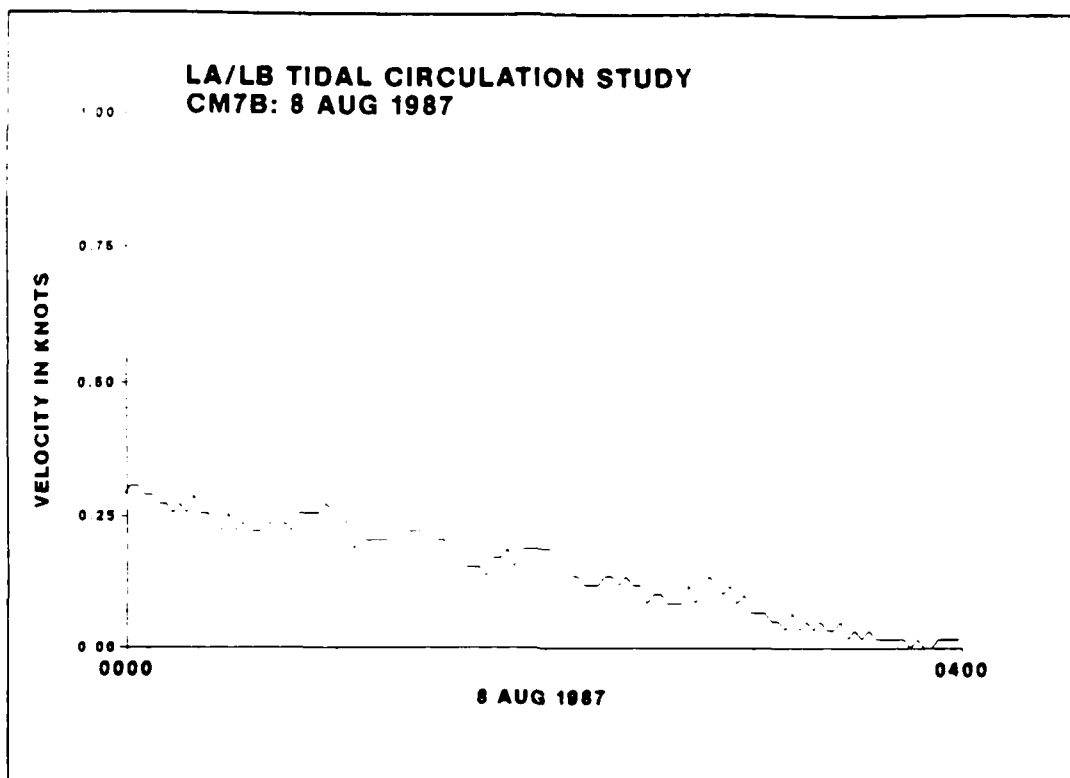






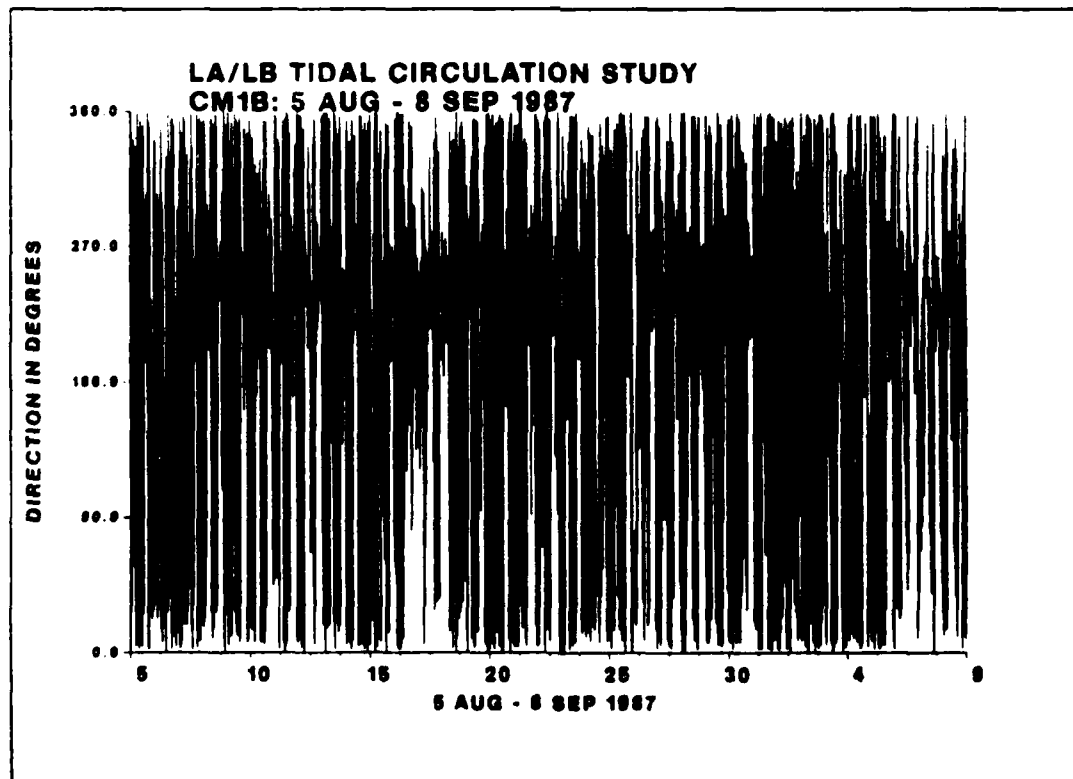
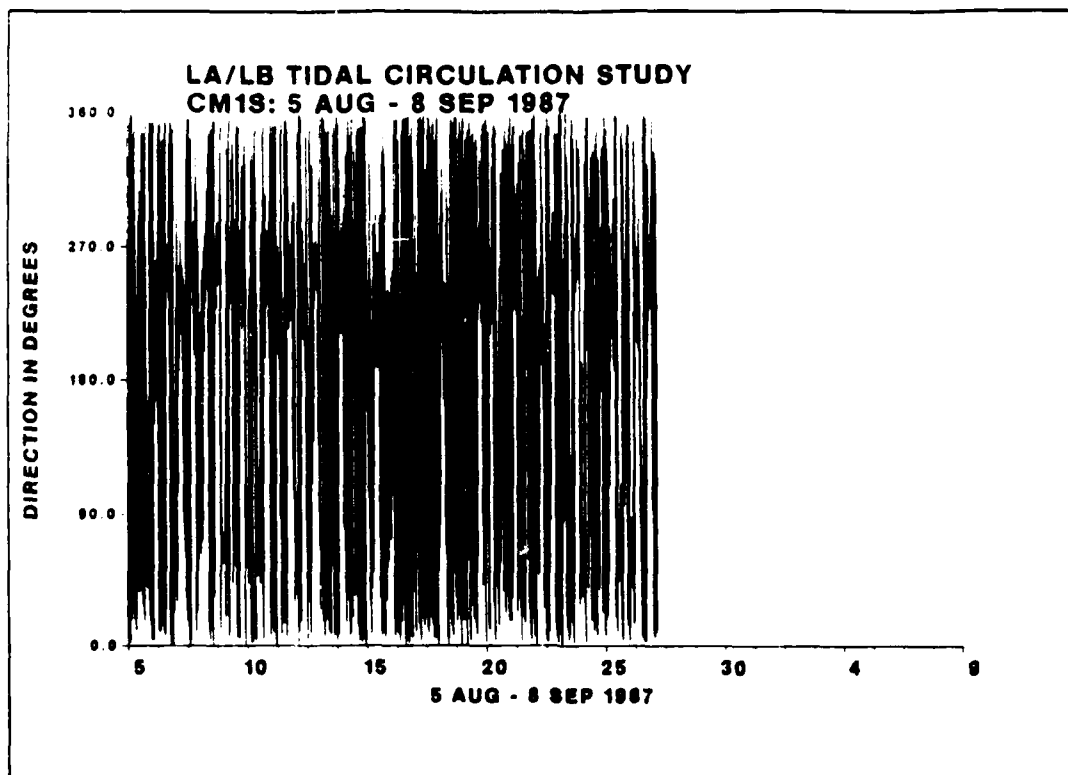


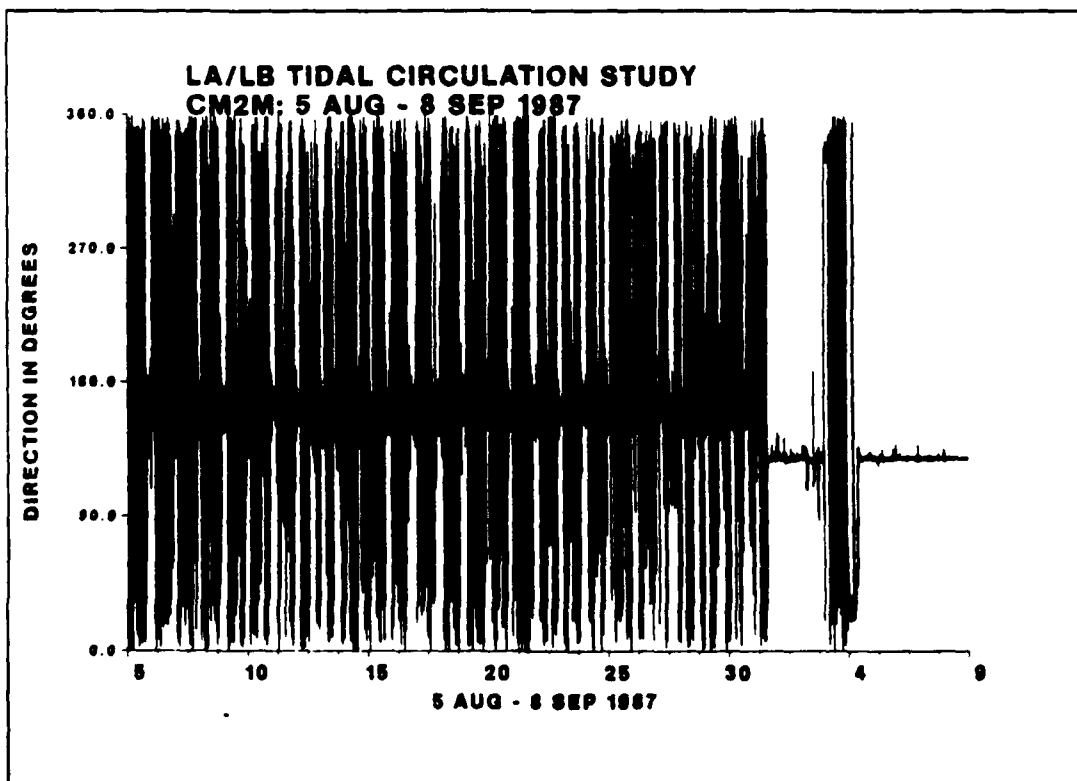
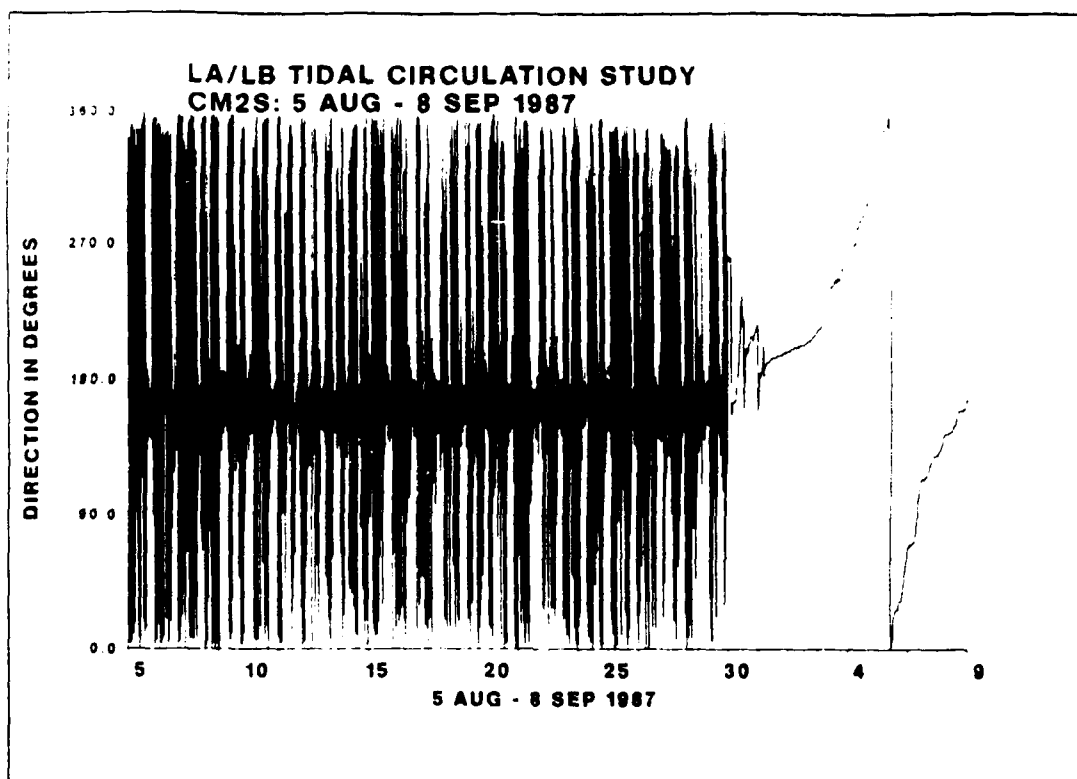


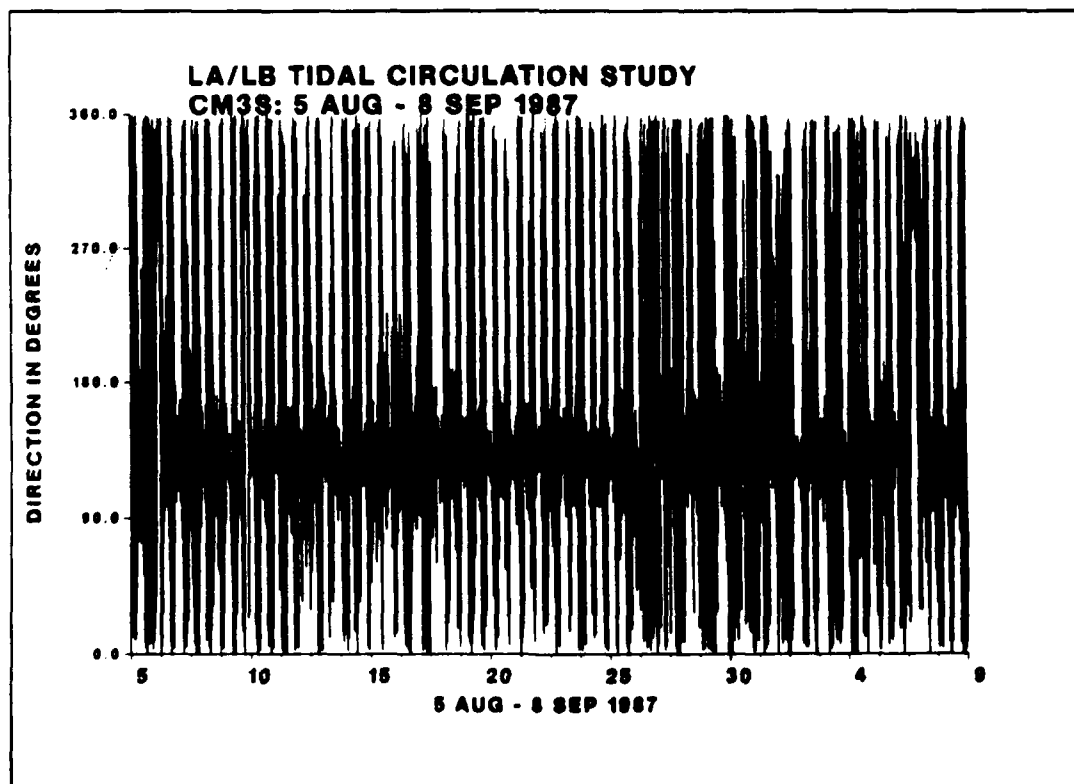
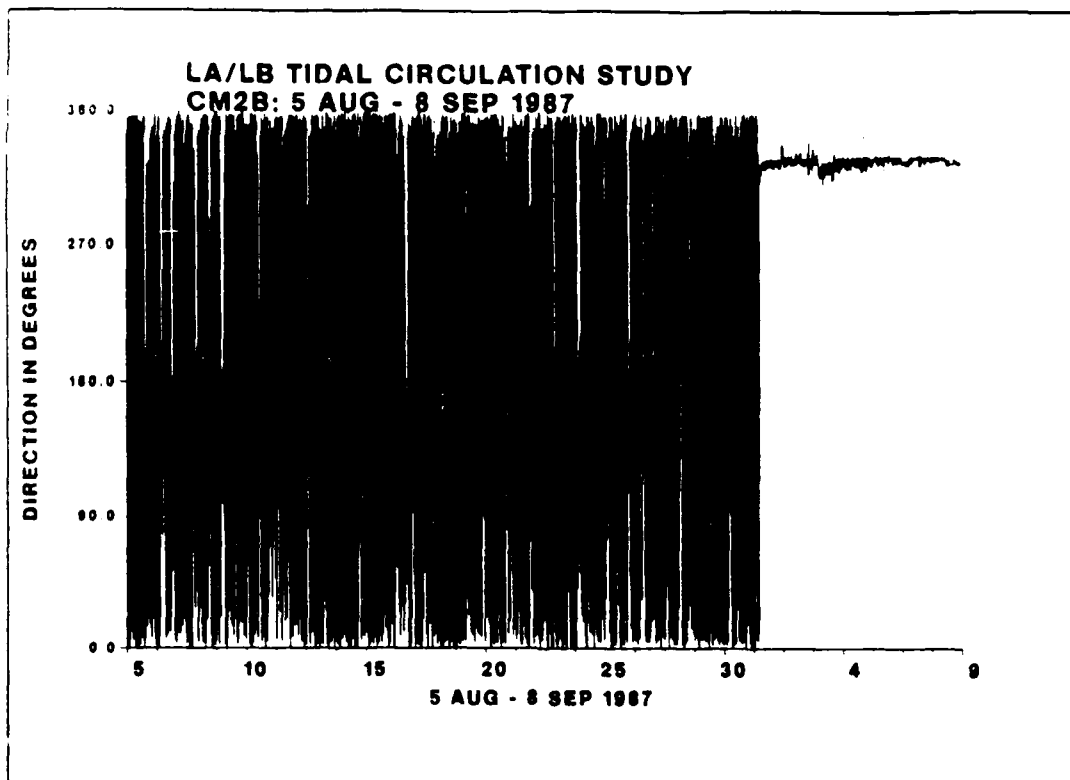


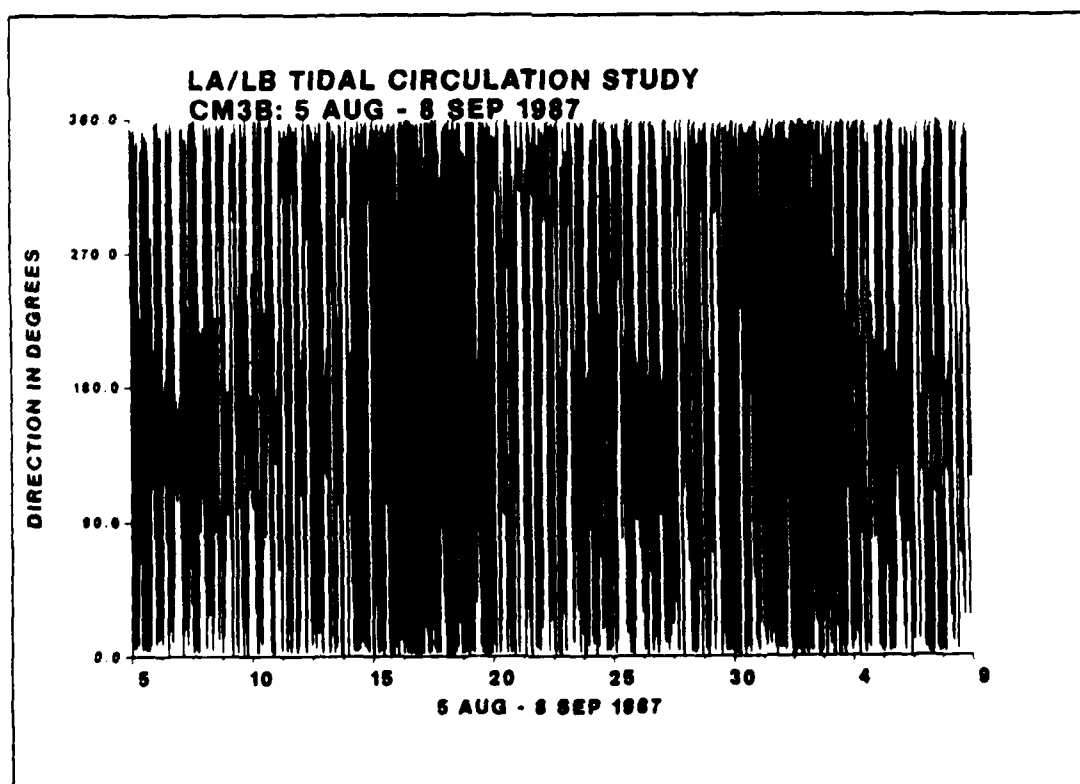
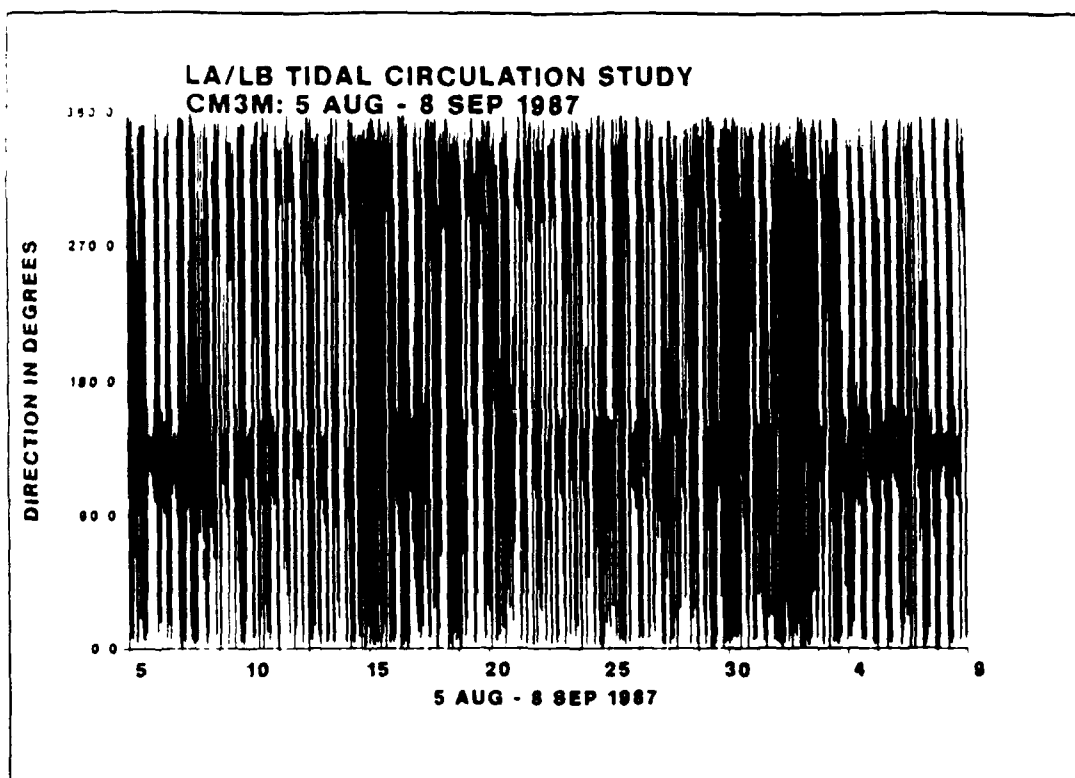
APPENDIX G: CURRENT DIRECTION TIME SERIES PLOTS

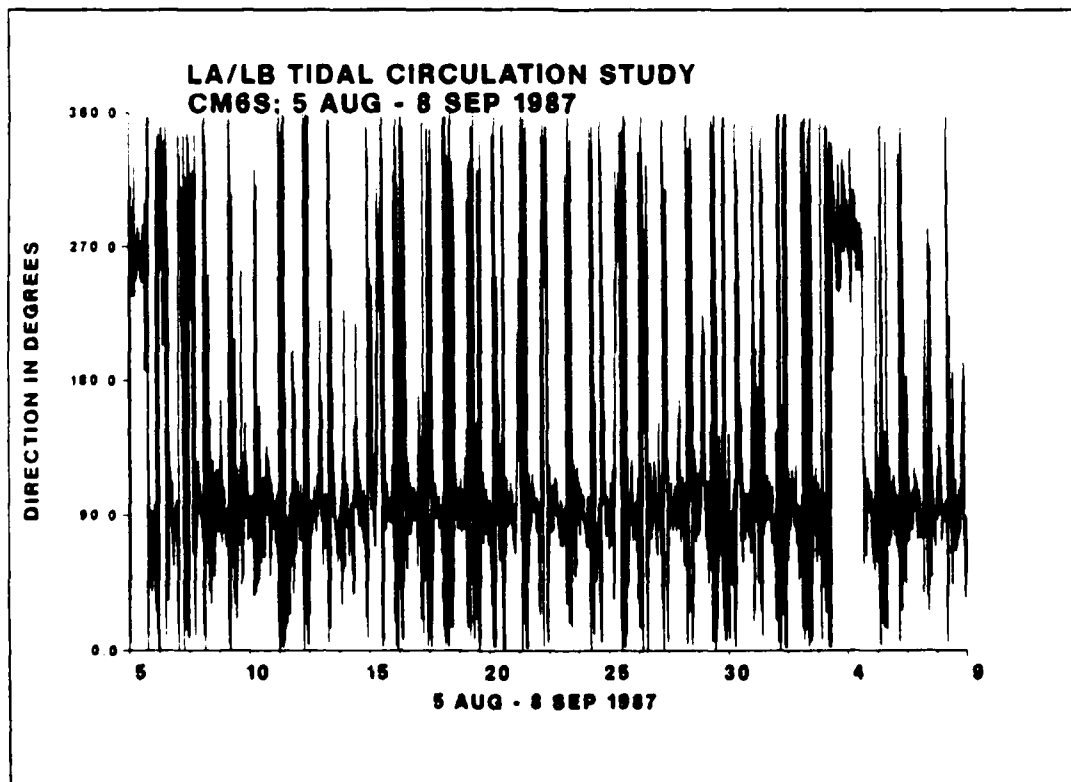
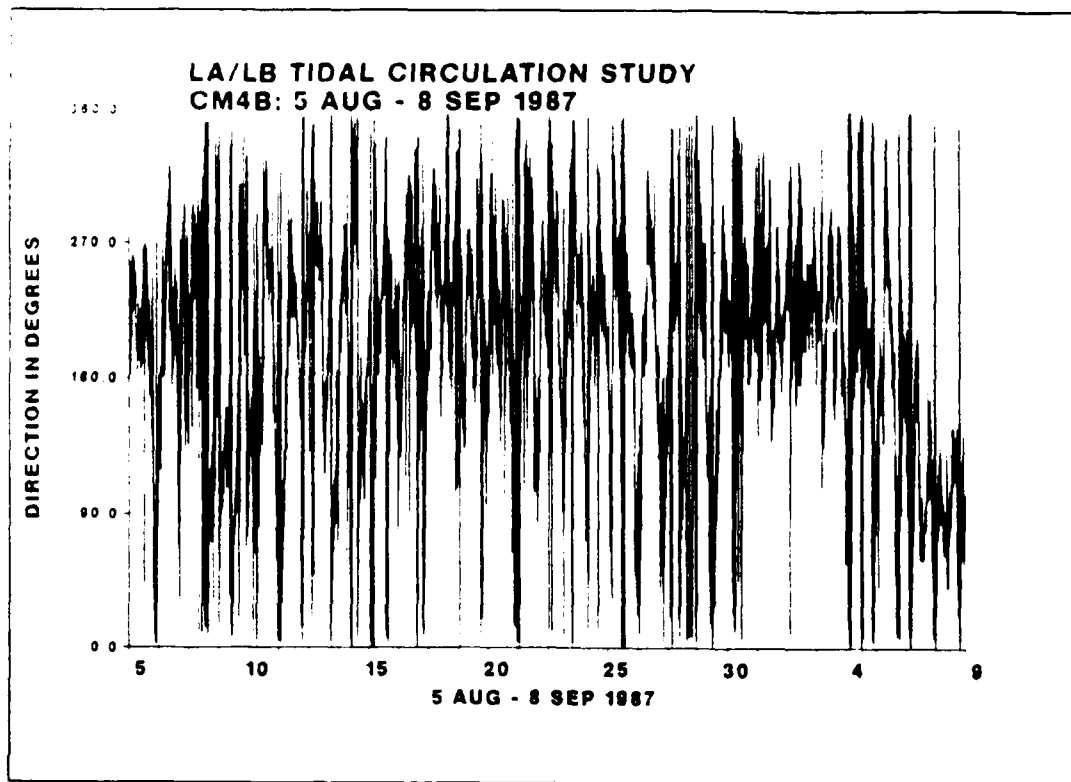
This appendix contains plots of current direction time series. Time series are suffixed with S, M, and B, which stand for surface, middepth, and bottom, respectively.

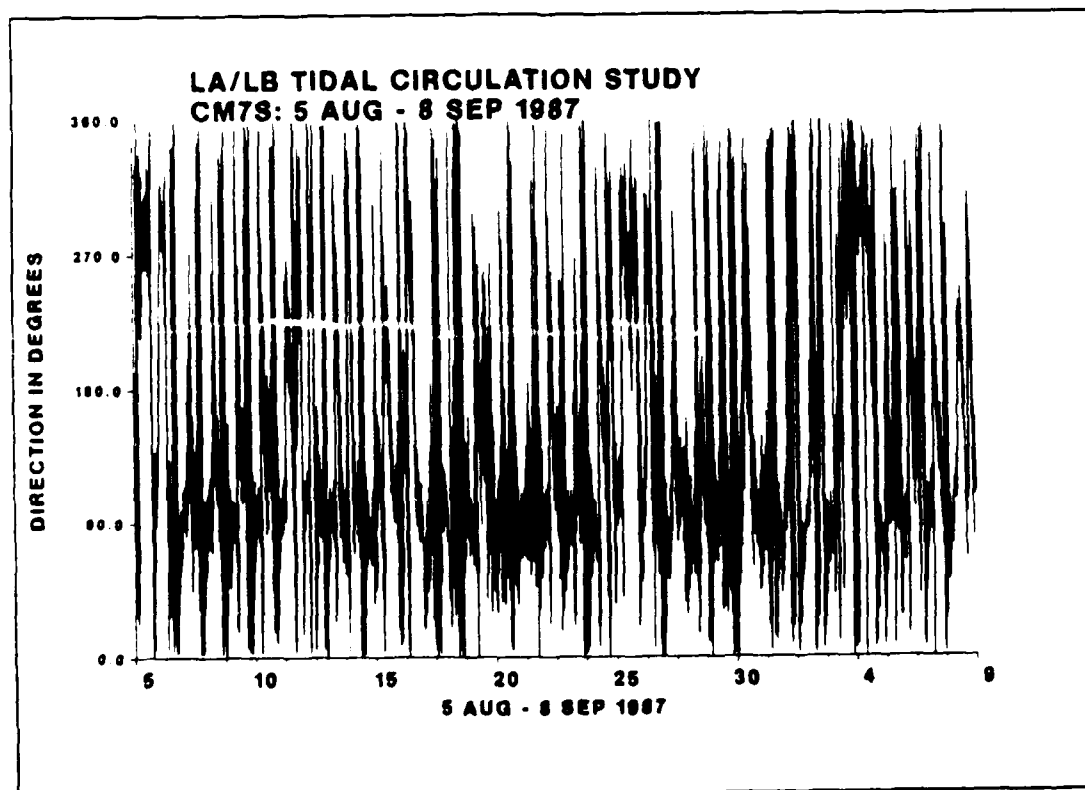
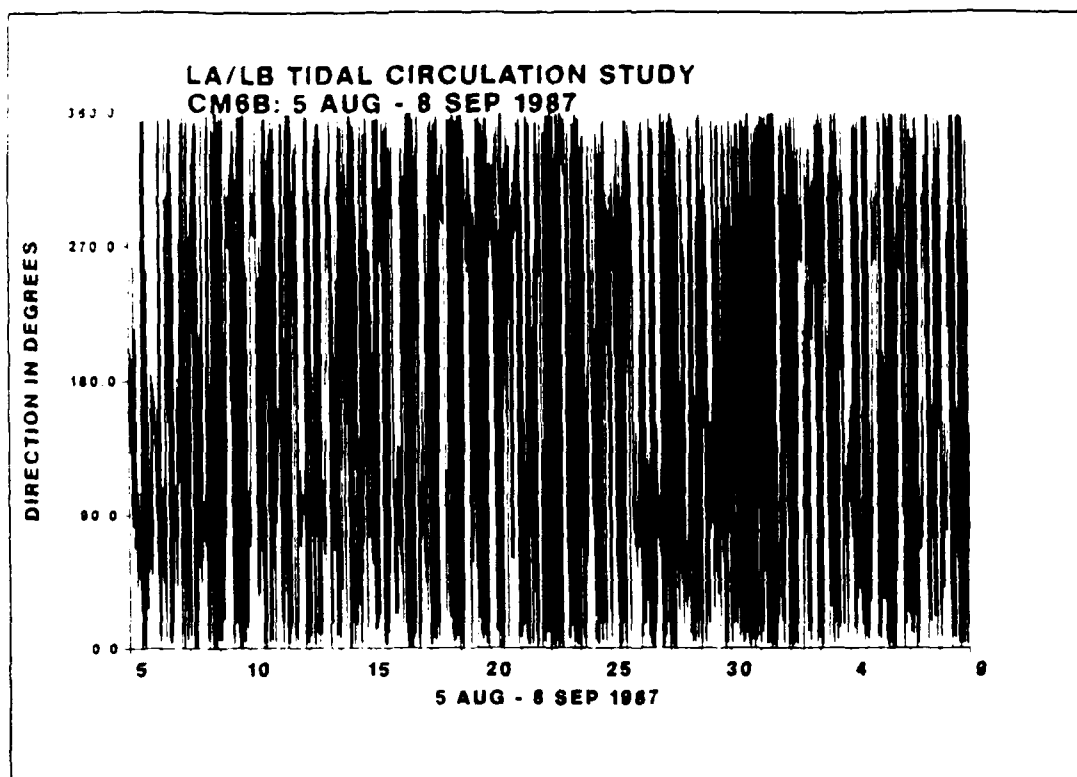


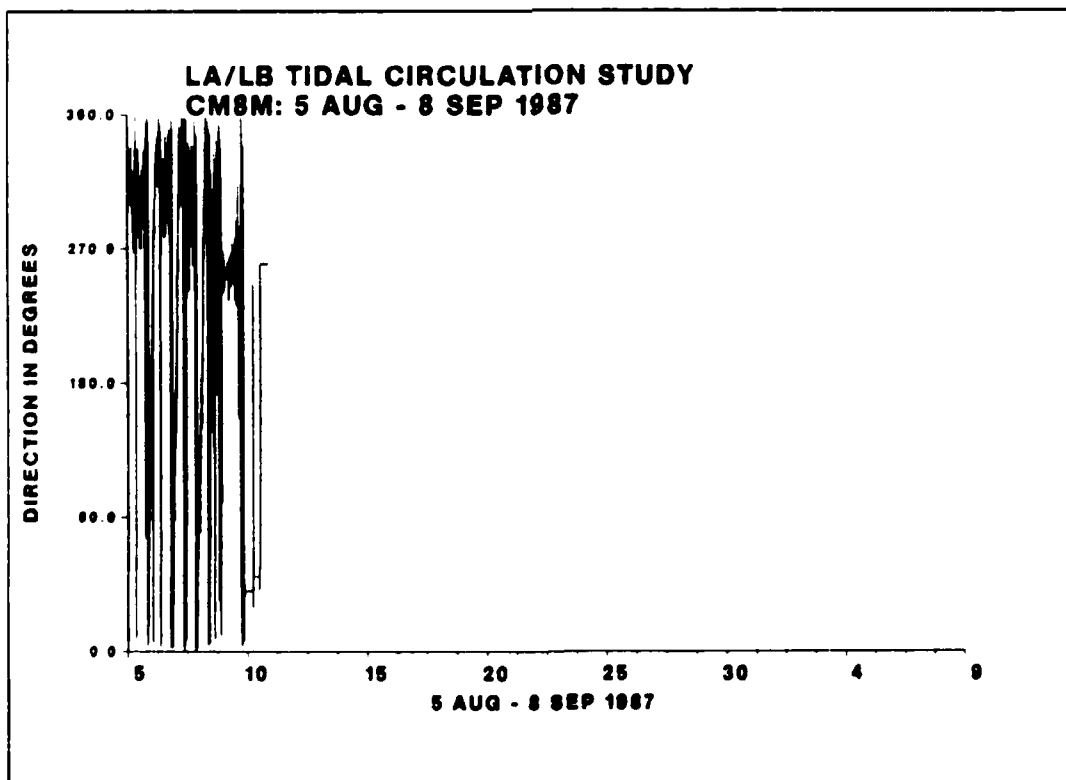
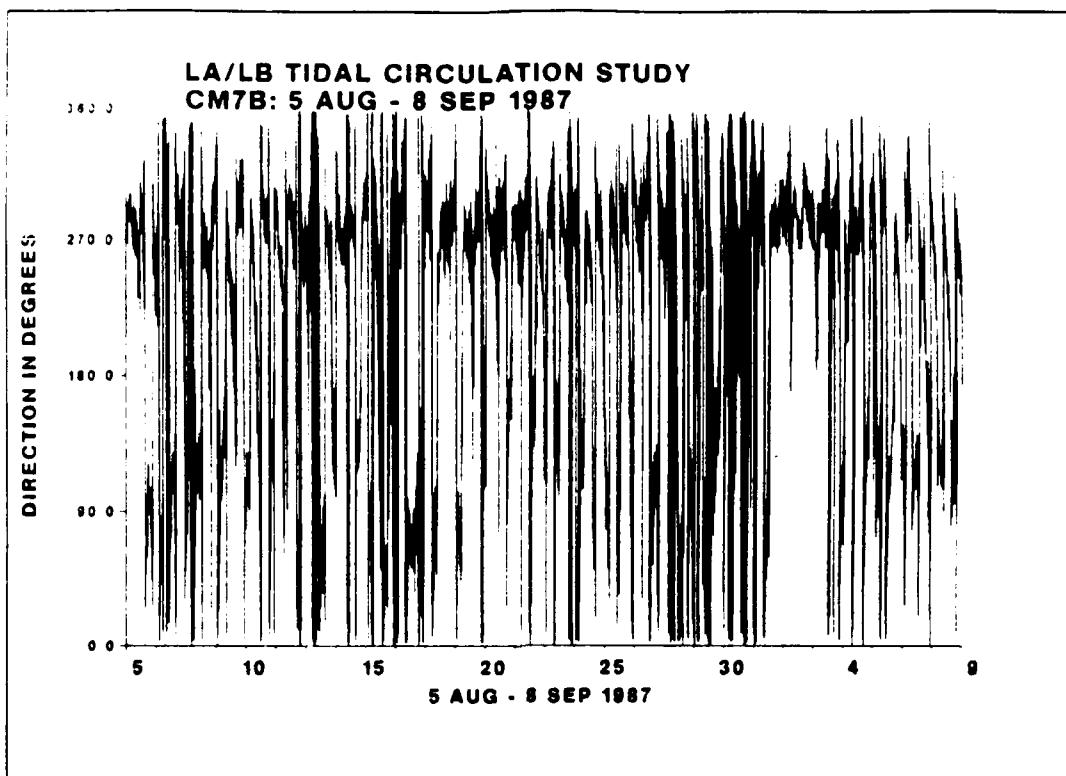


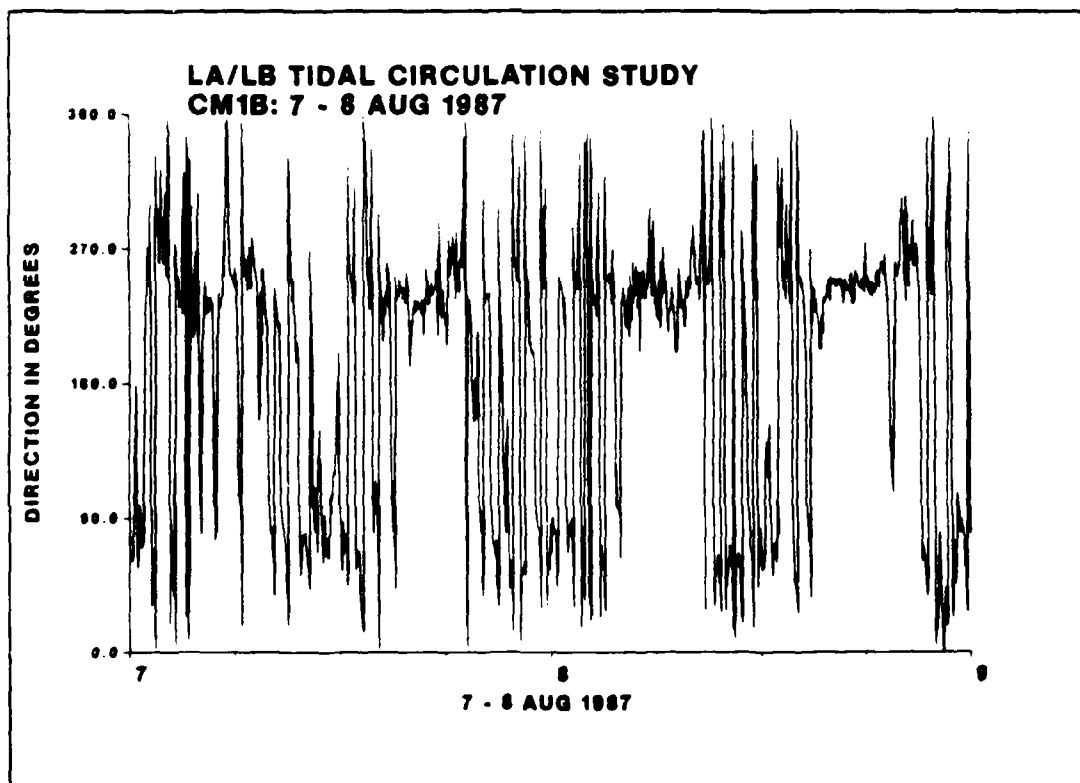
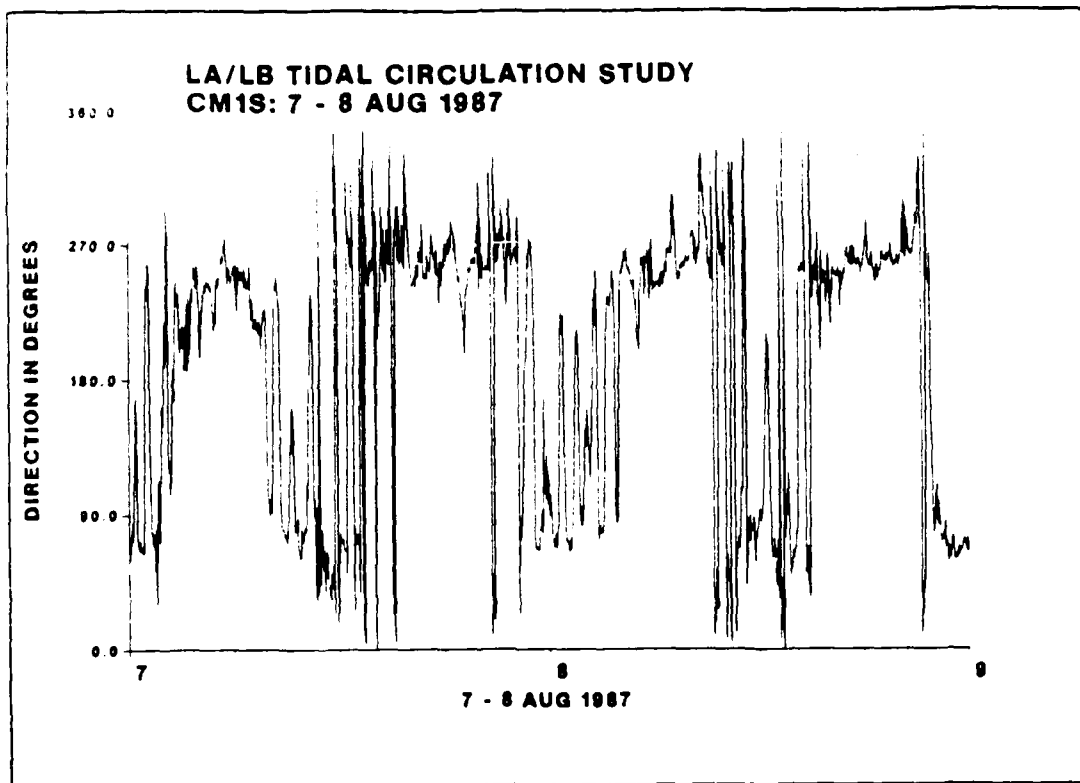


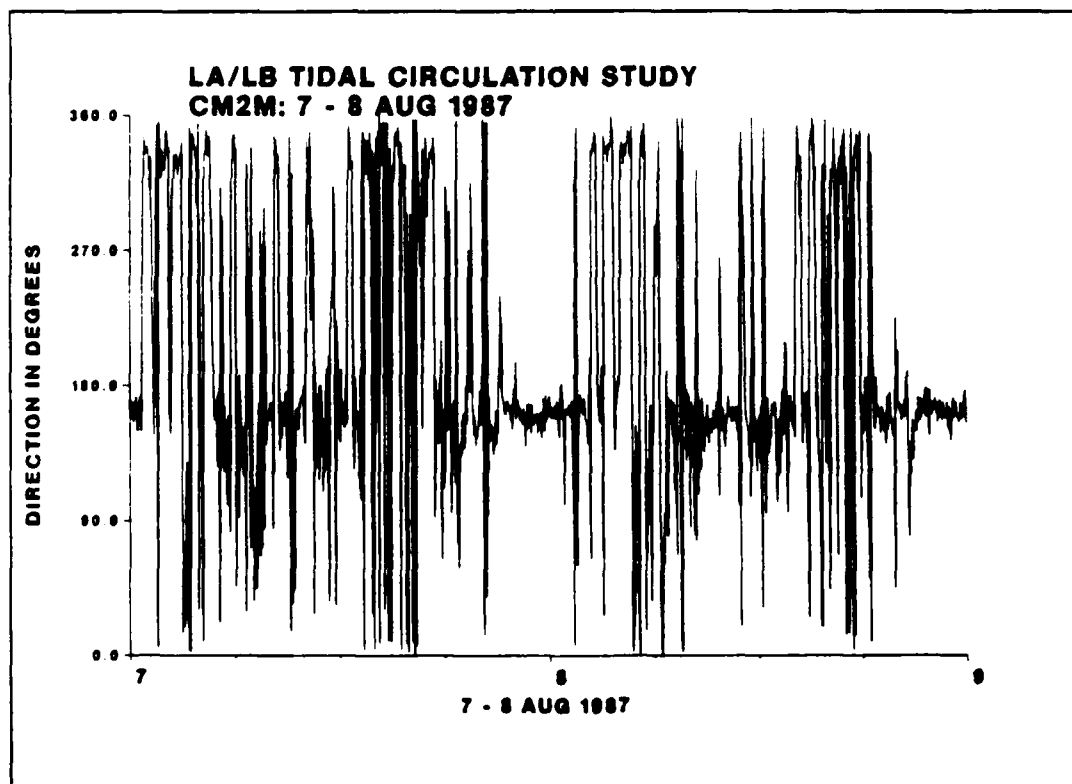
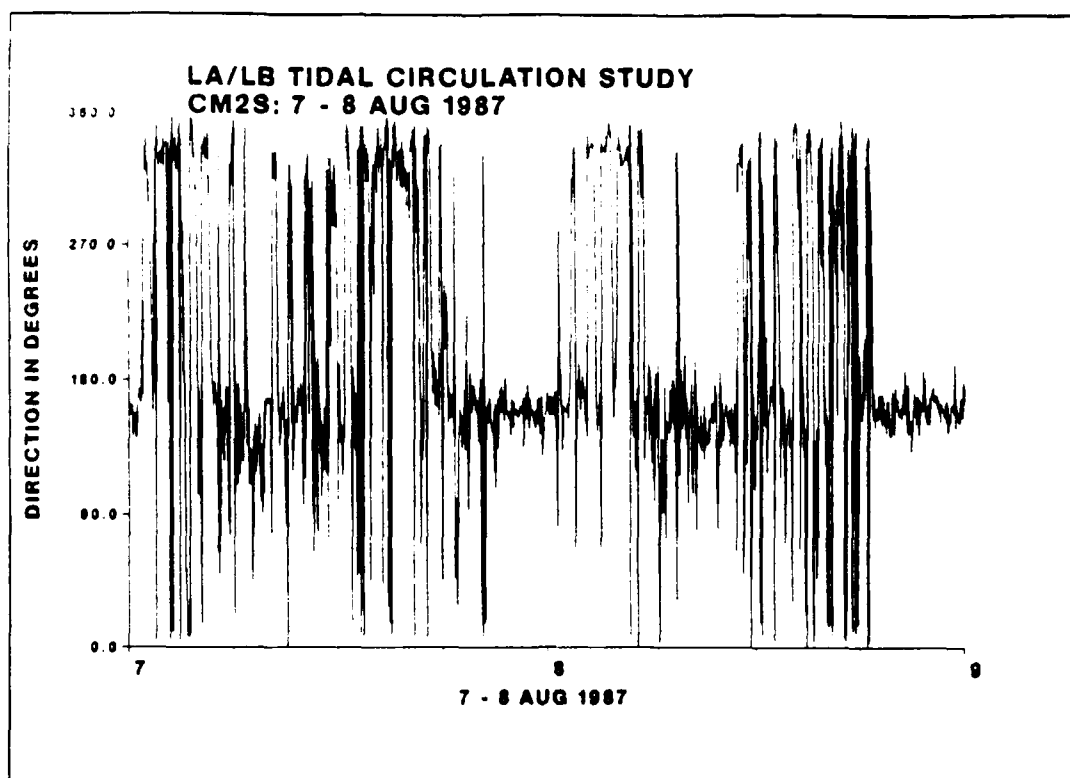


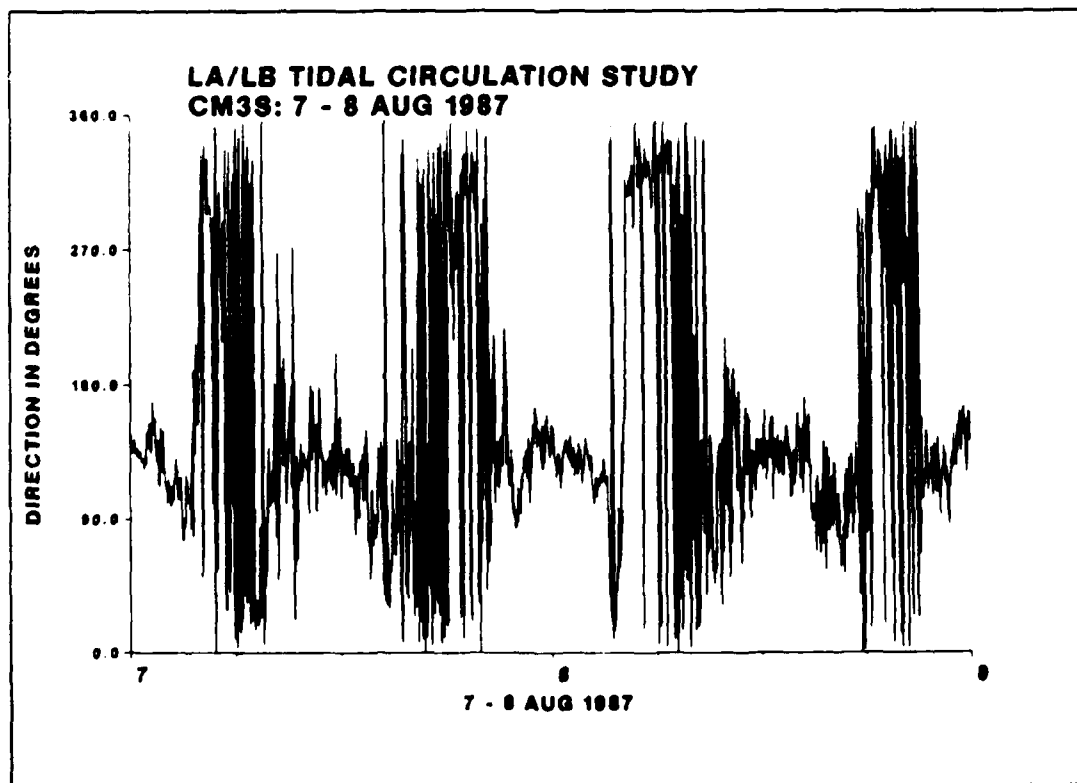
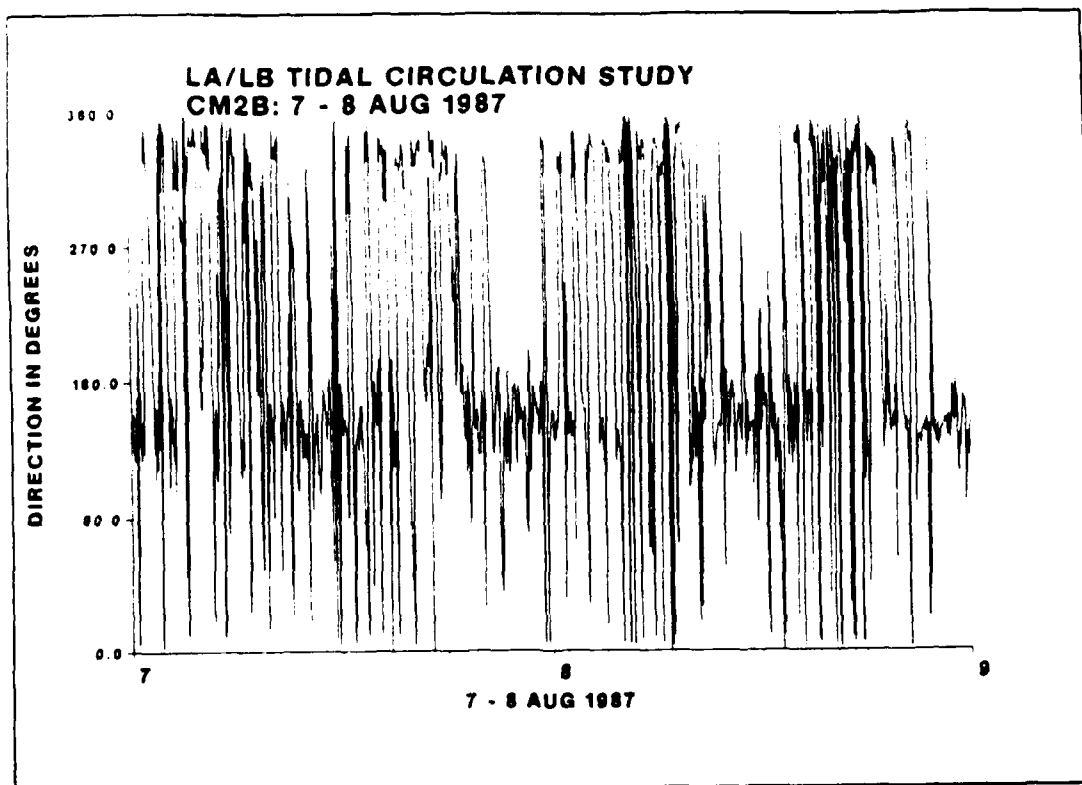


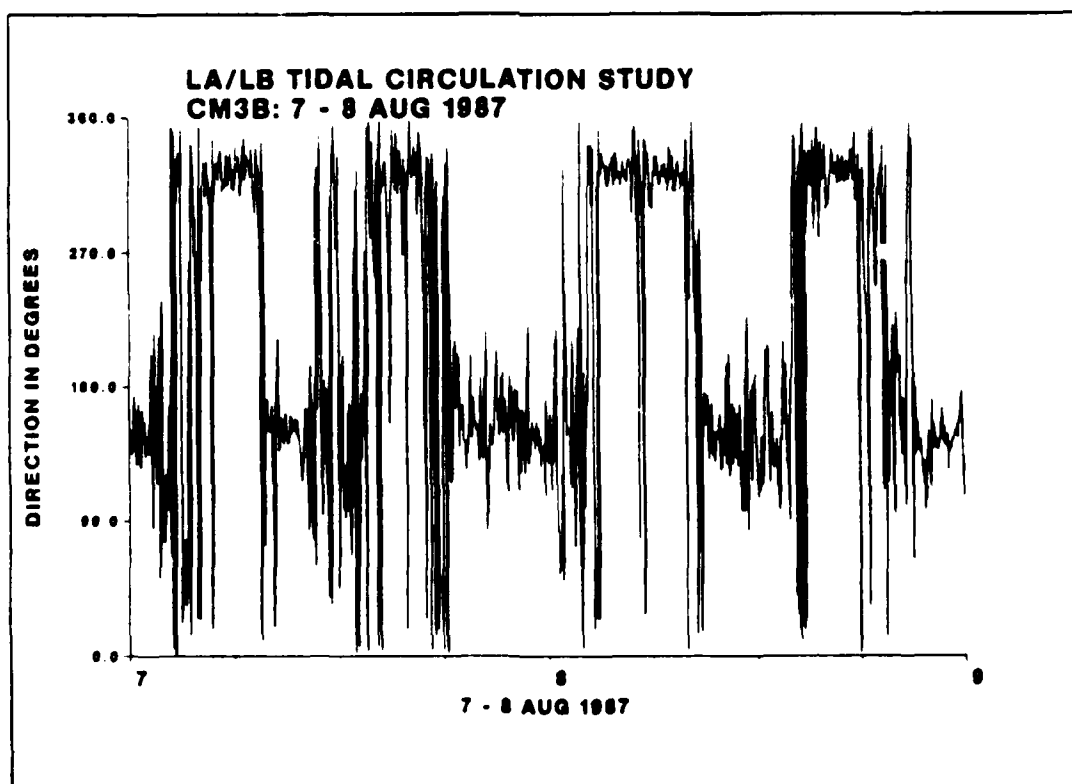
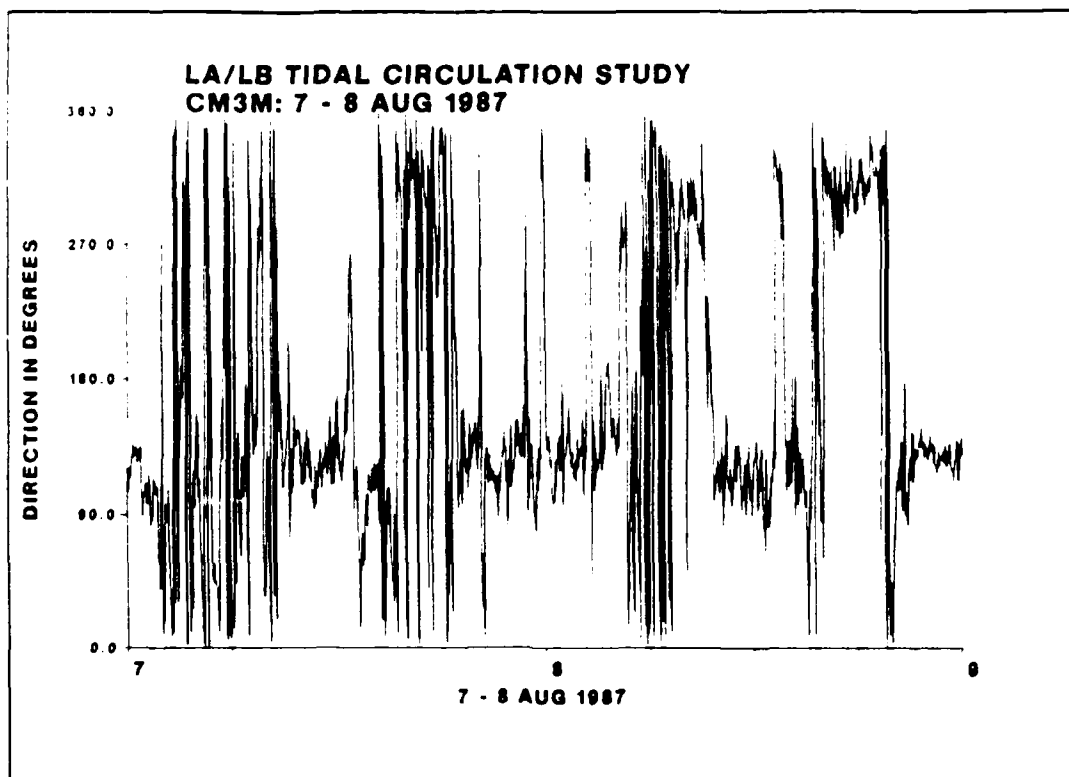


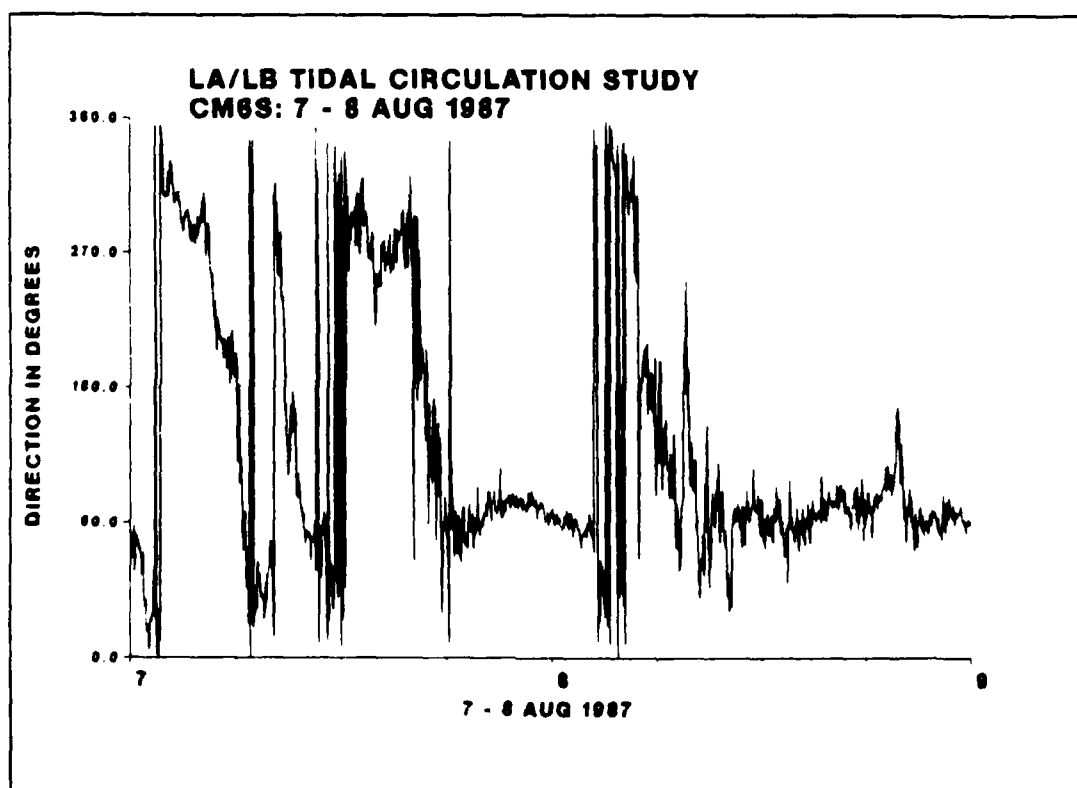
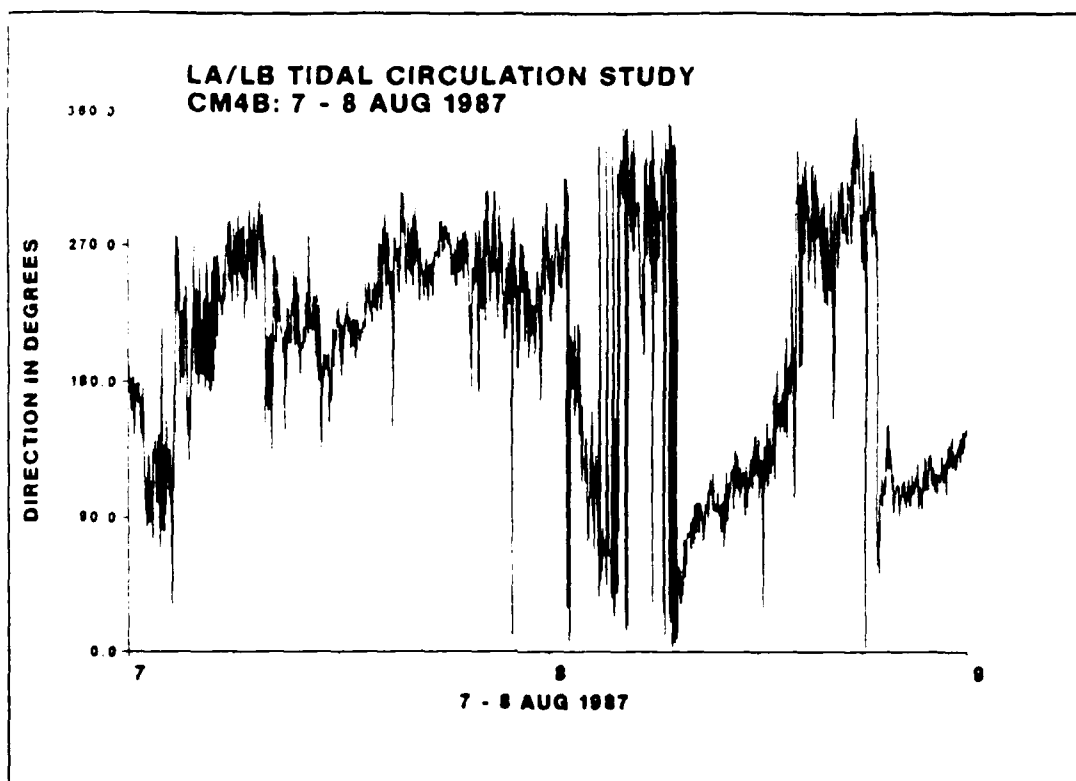


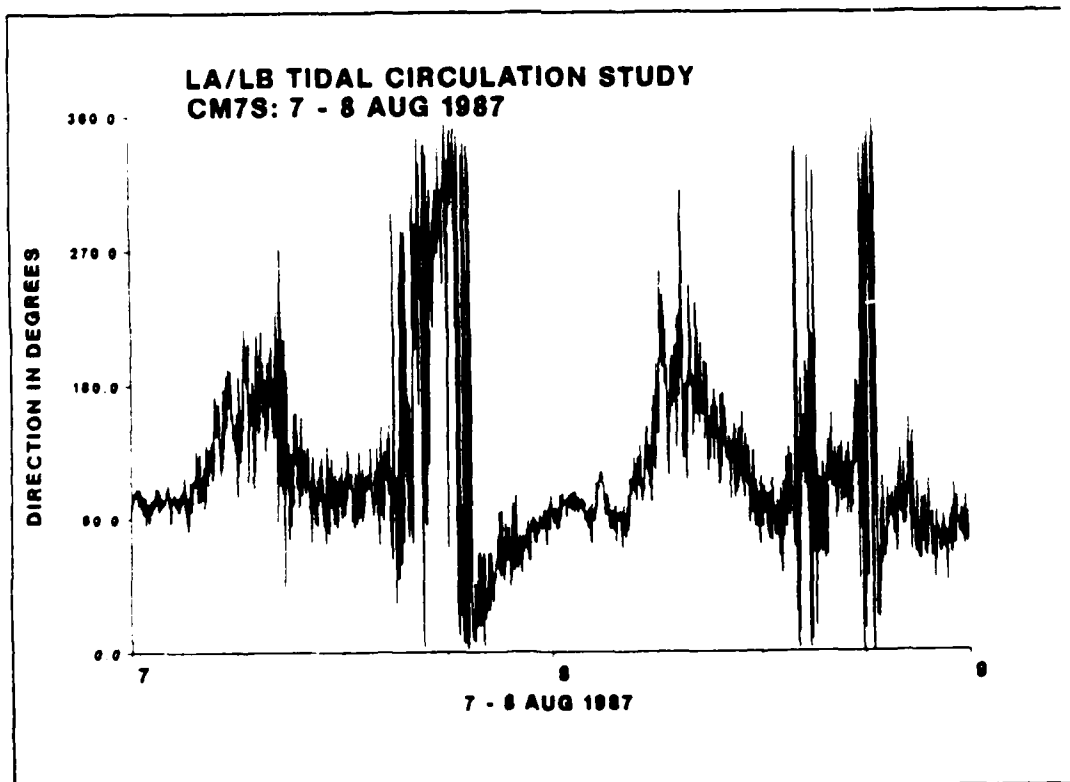
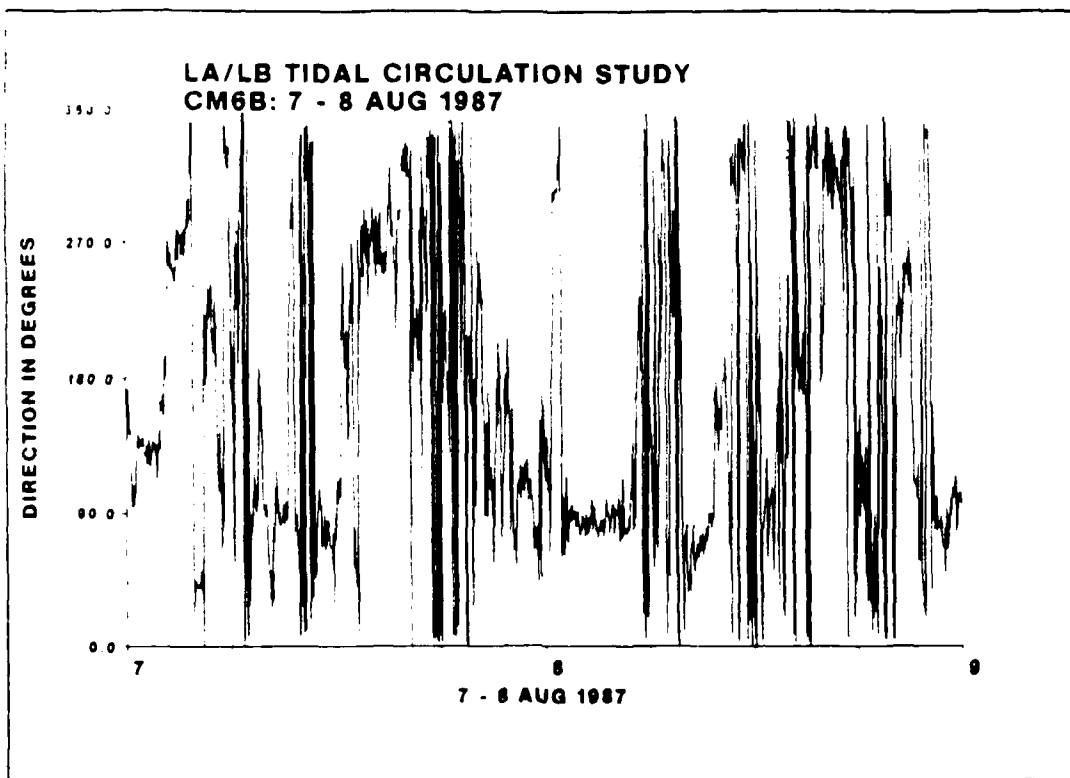


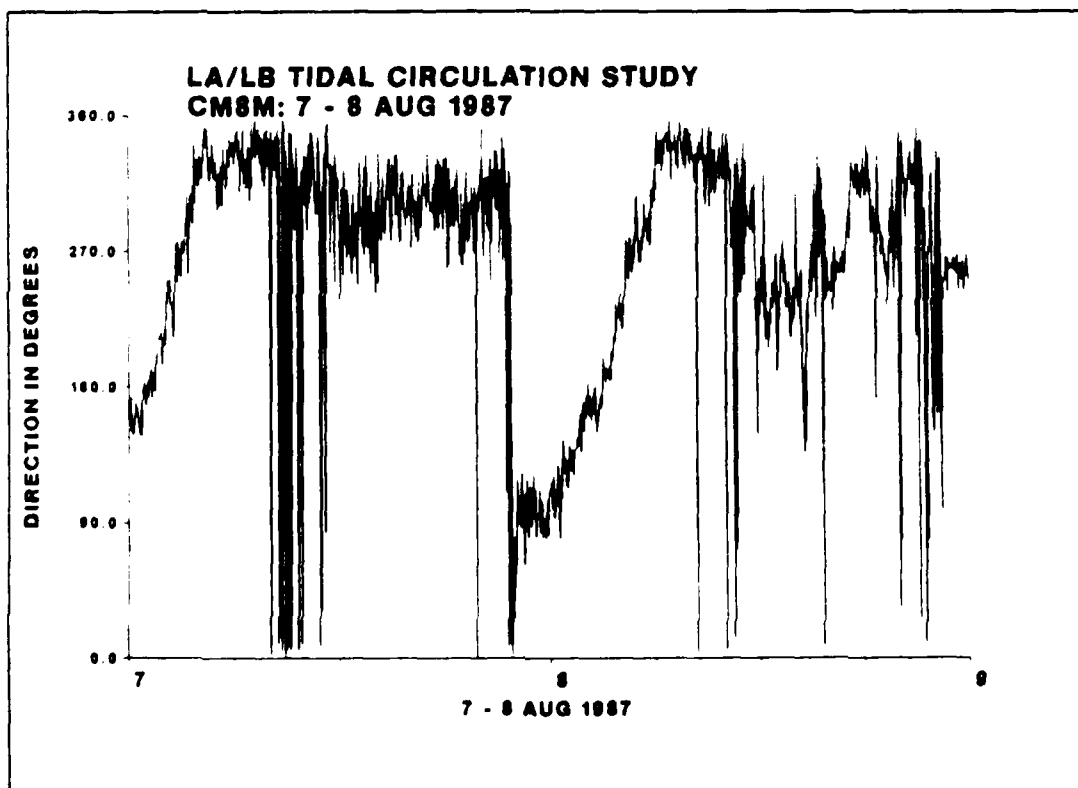
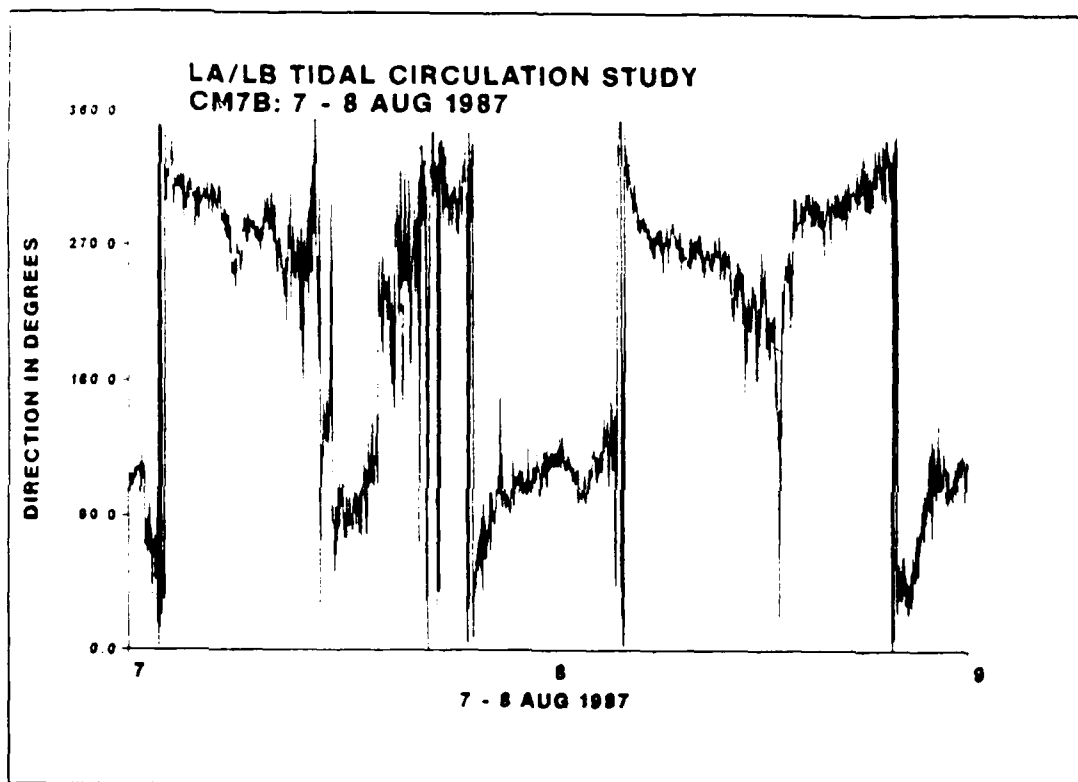


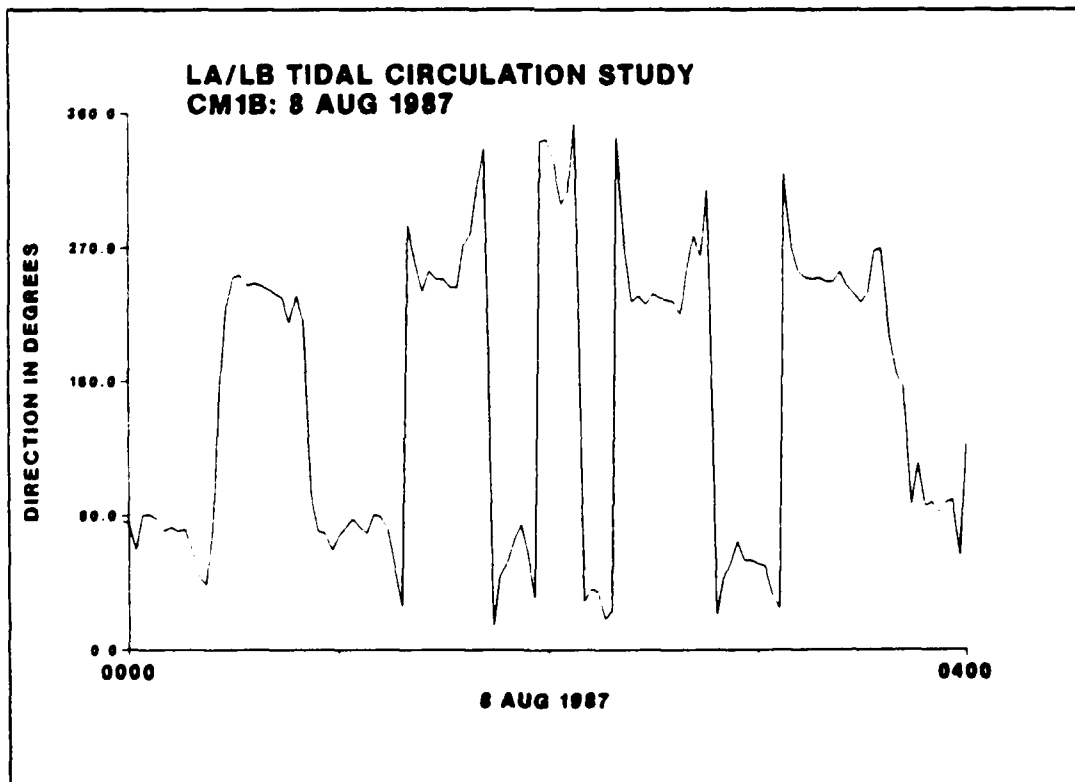
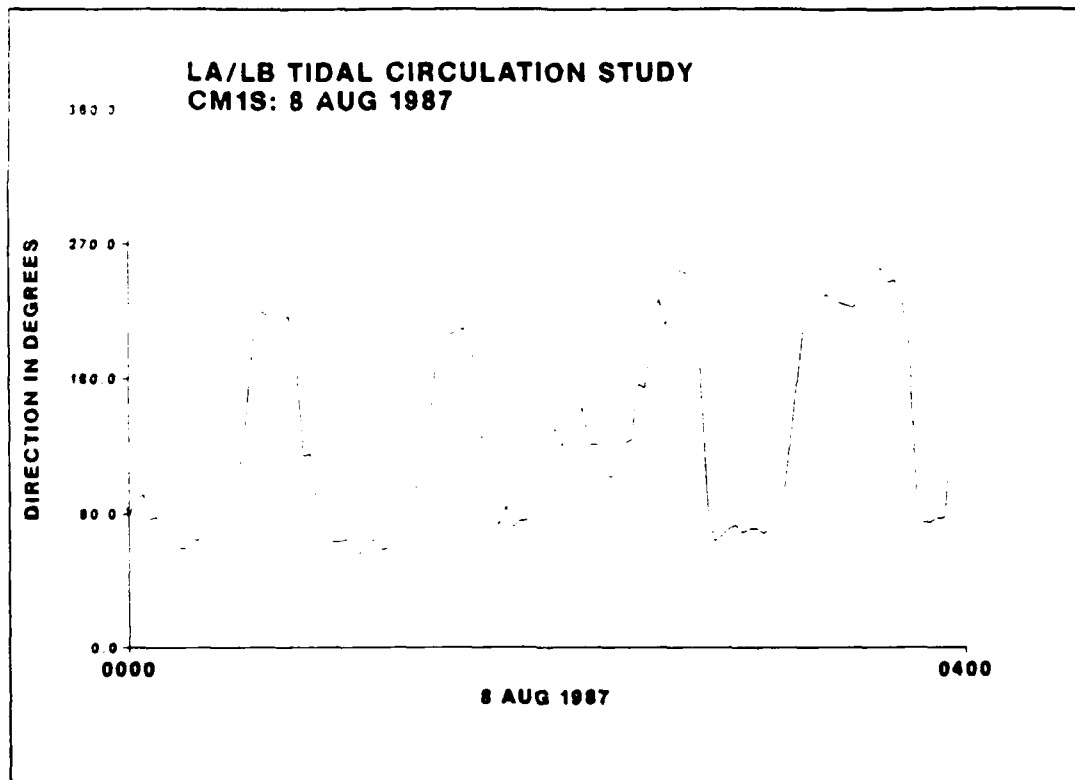


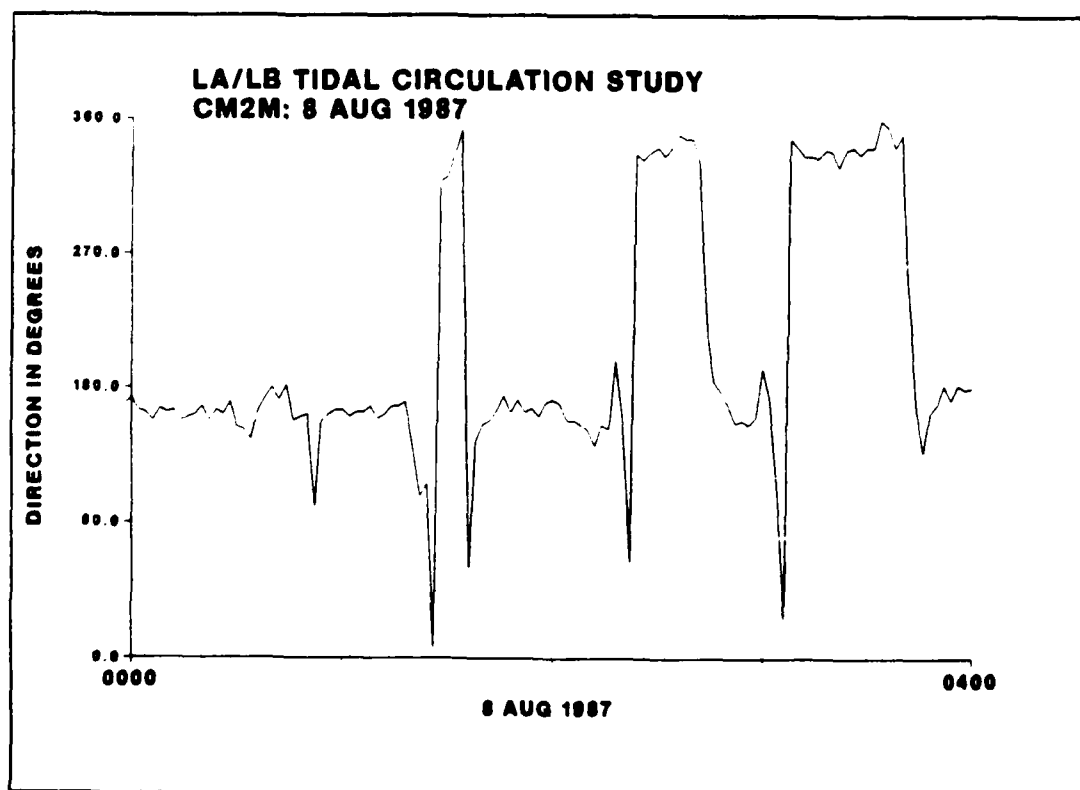
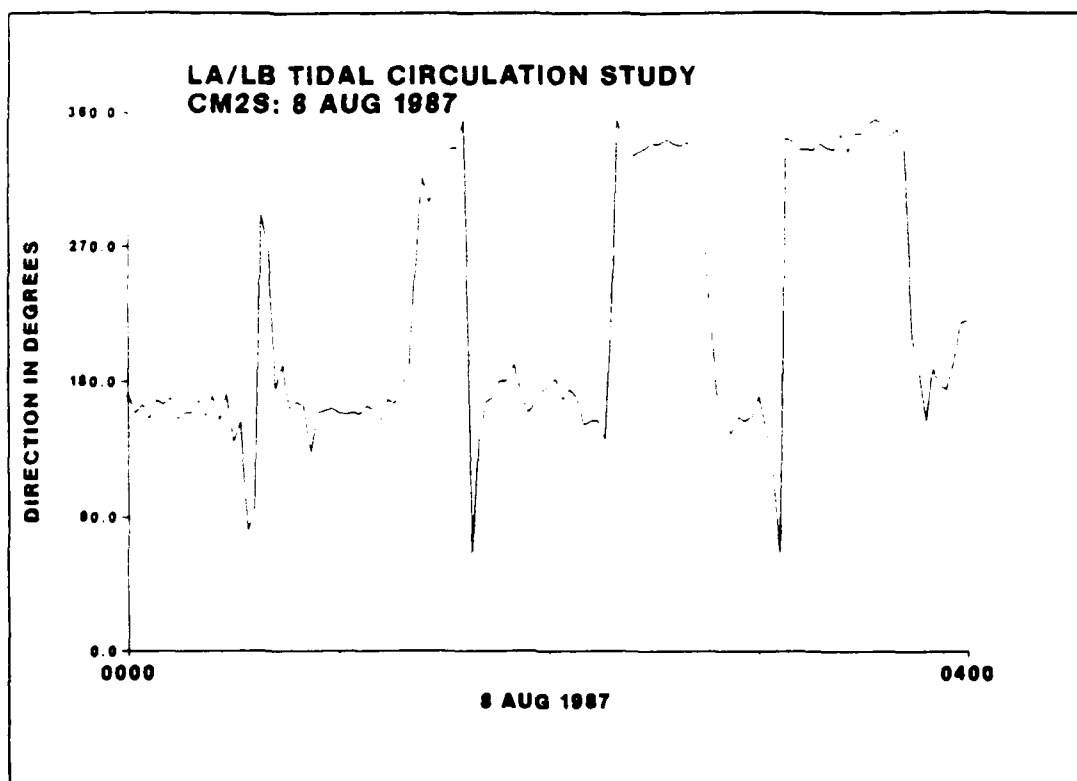


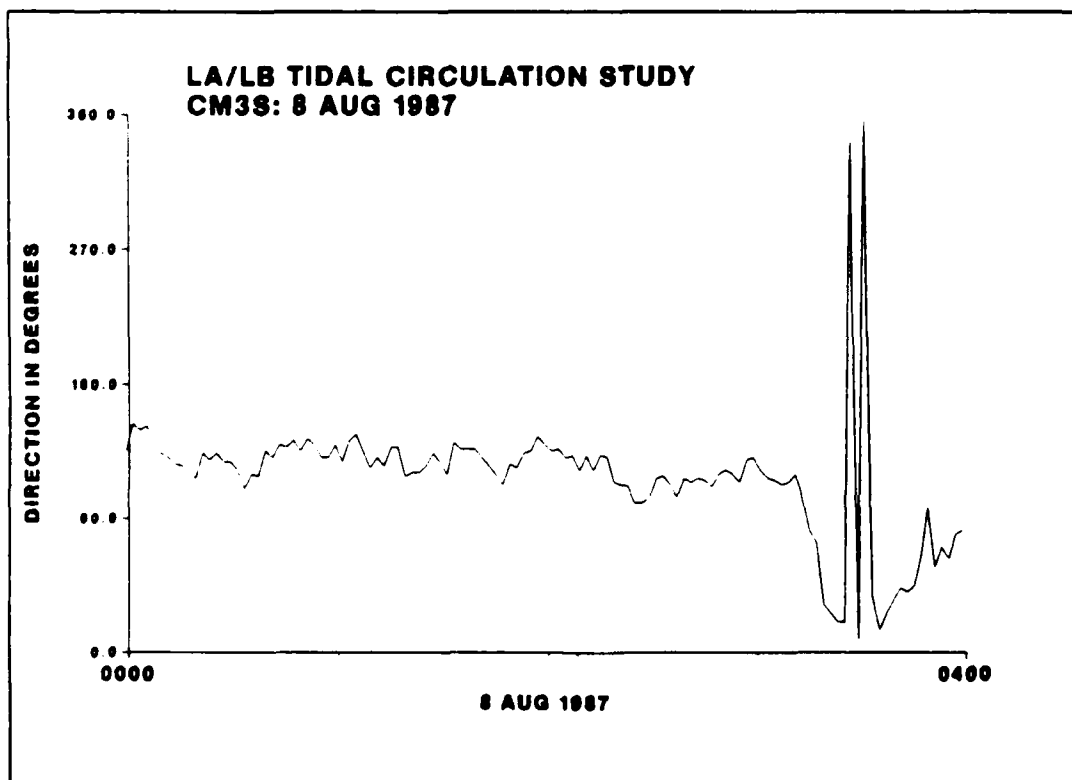
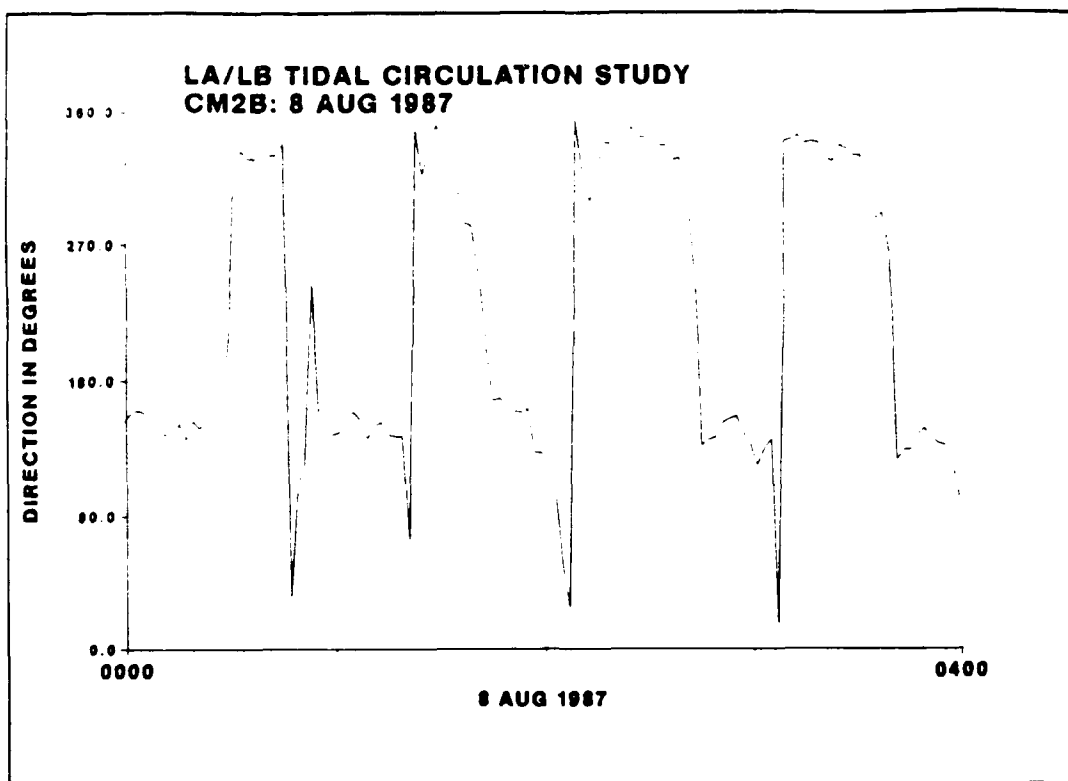


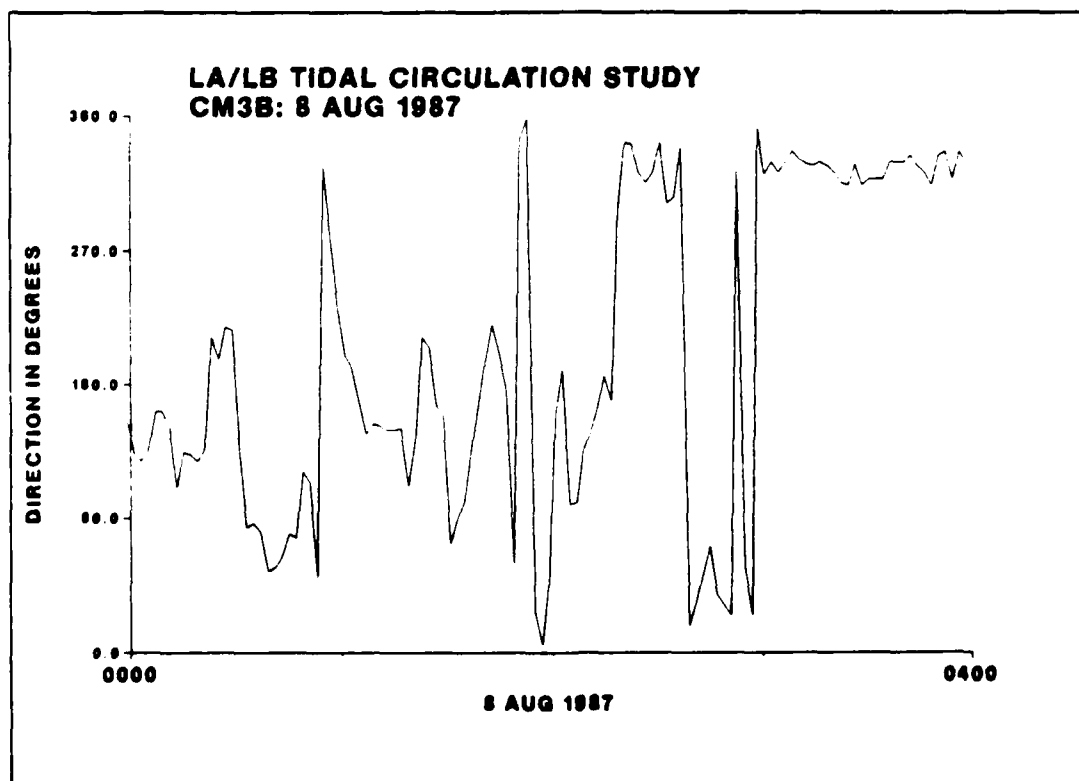
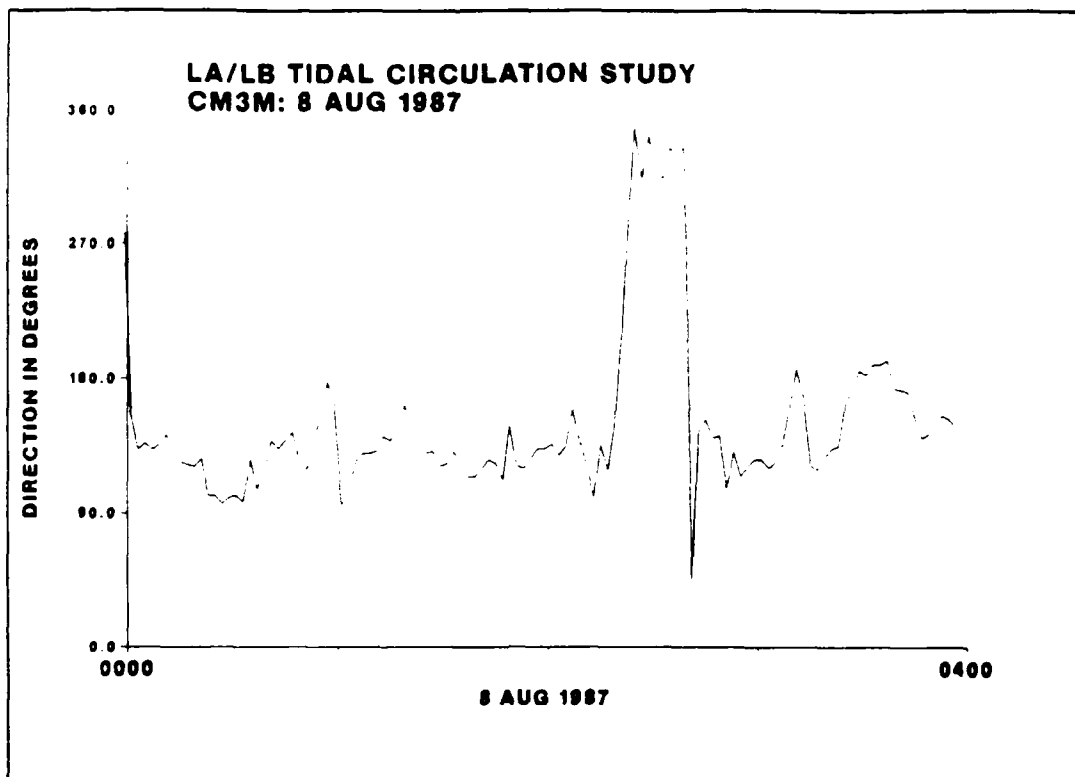


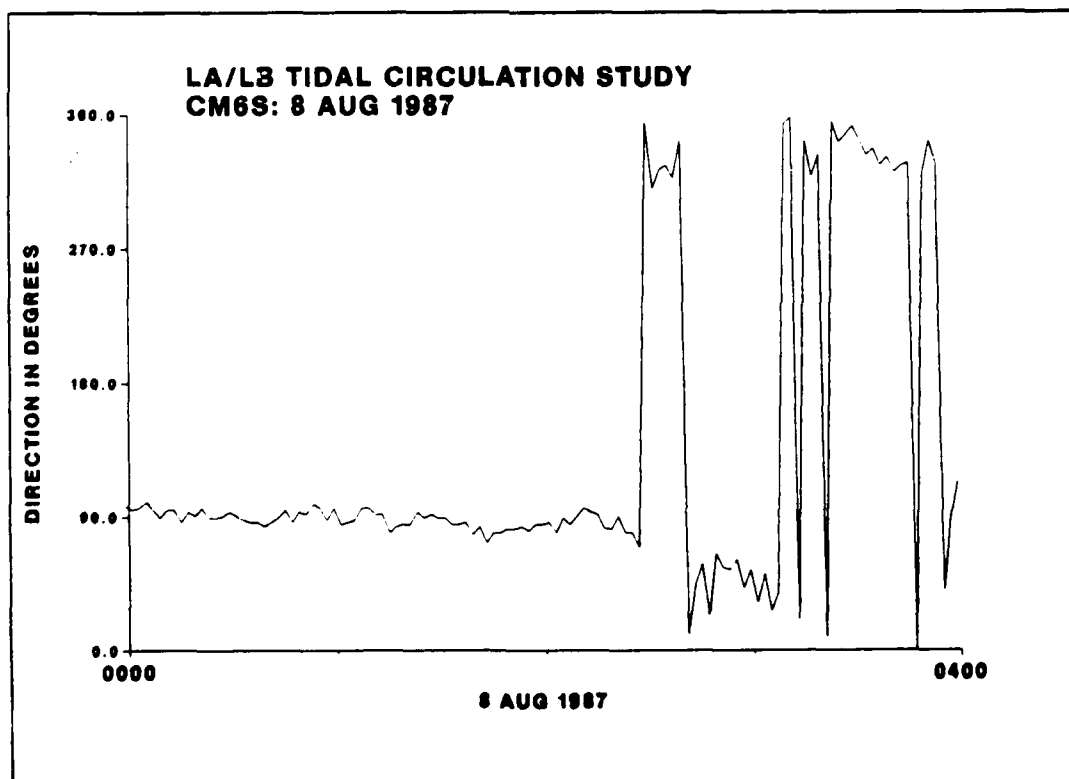
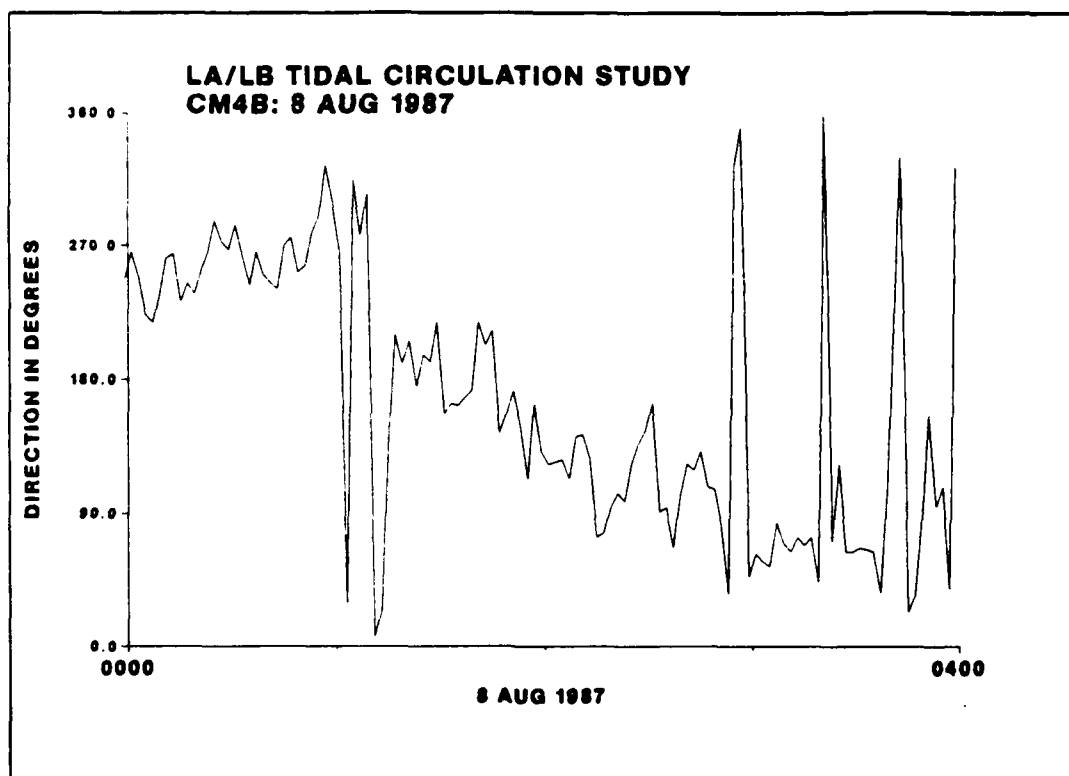


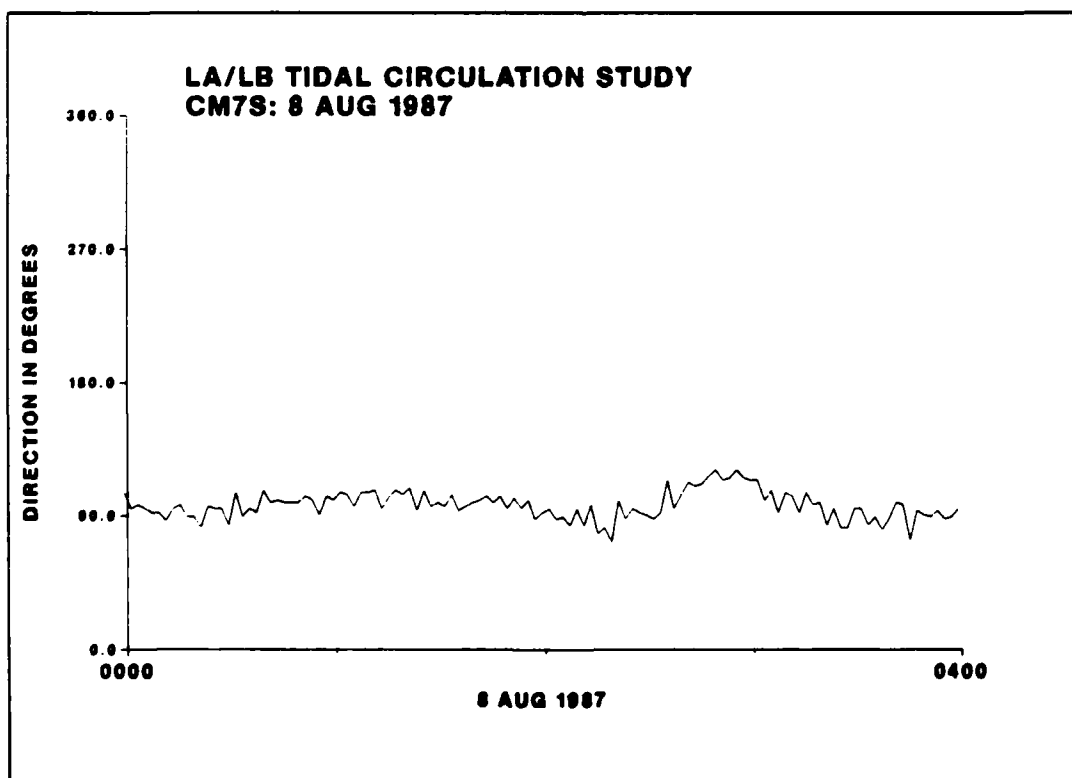
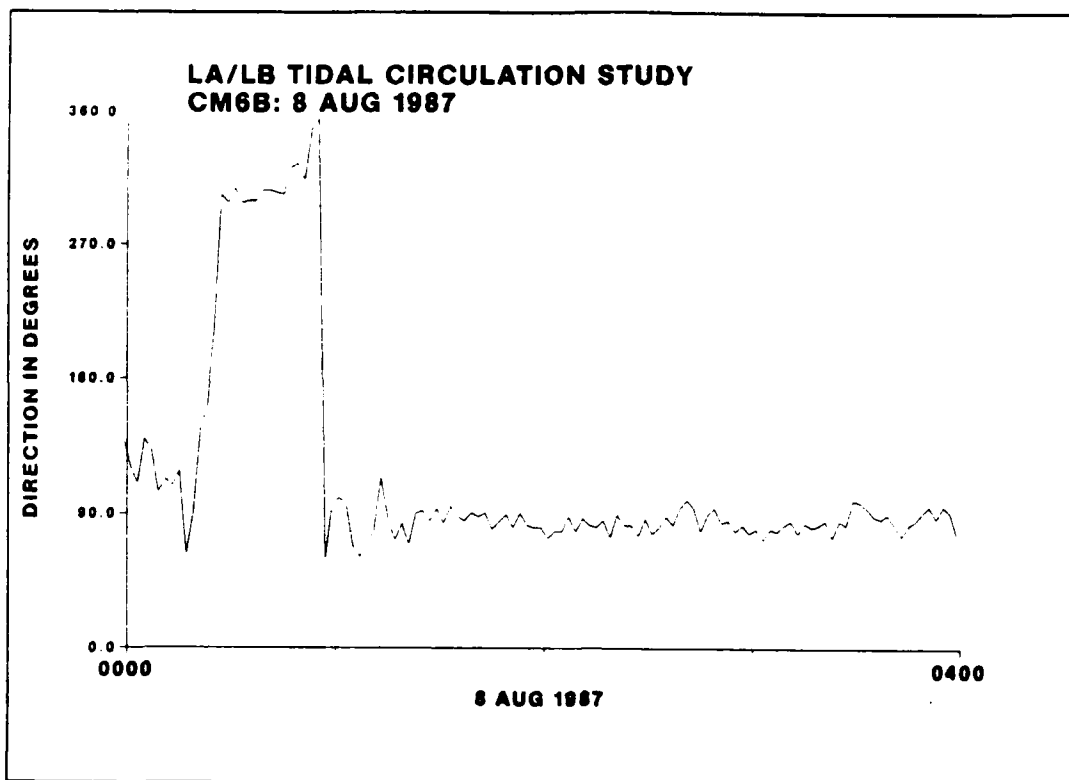


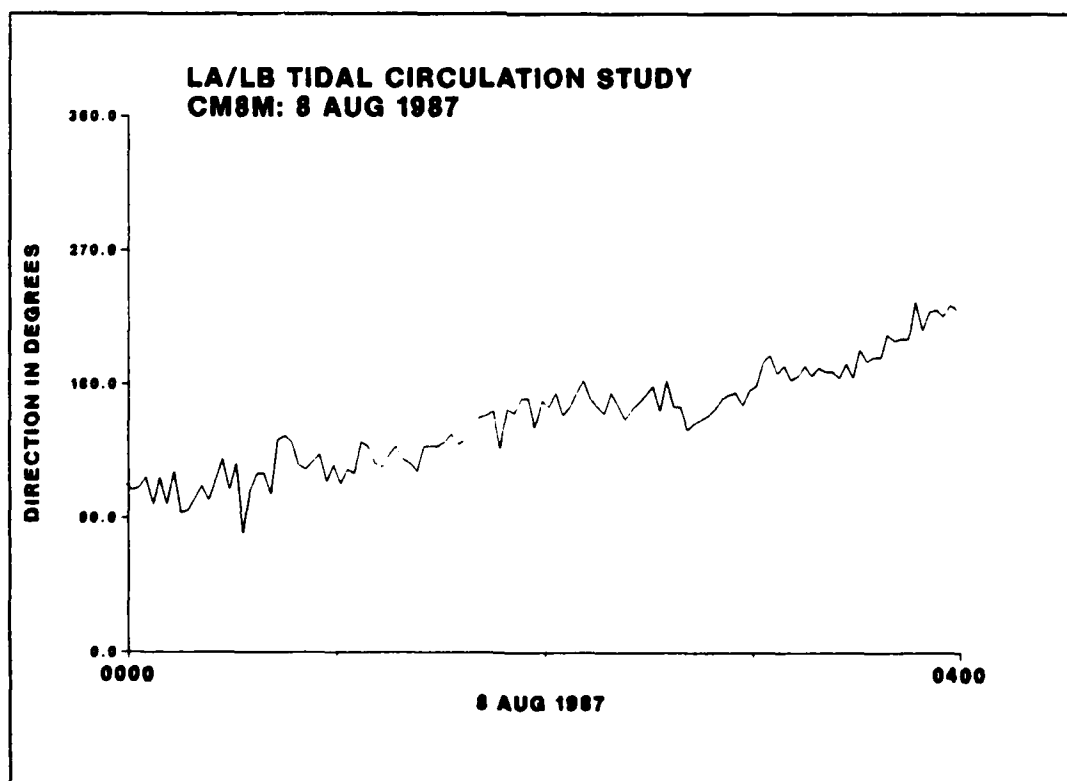
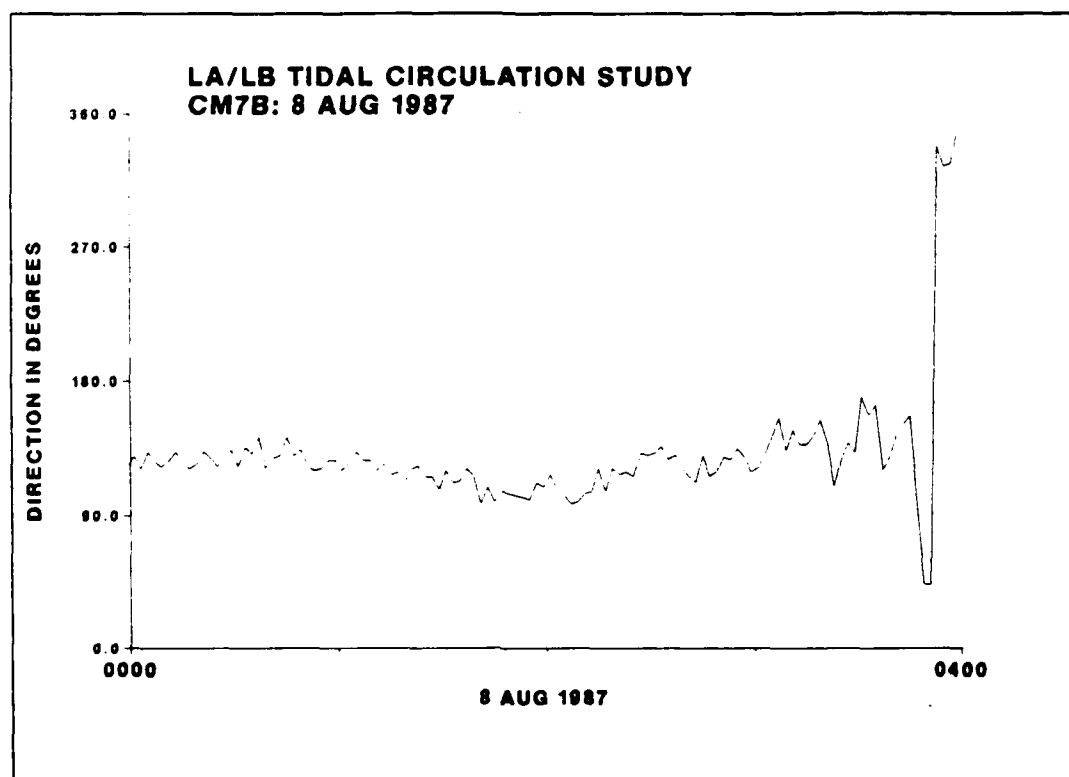












APPENDIX H: CURRENT VECTOR TIME SERIES PLOTS

This appendix contains plots of current vector time series. Time series are suffixed with S, M, and B, which stand for surface, middepth, and bottom, respectively.

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM1B: 7 - 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM1B: 7 - 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM28: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

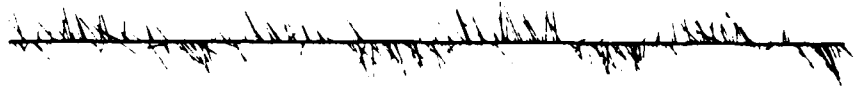
9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM2M: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM2B: 7 - 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

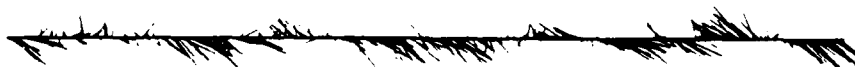
VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM3B: 7 - 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM3M: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



7

8

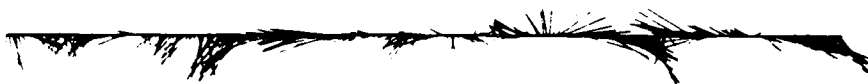
9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM3B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



7

8

9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM4B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



7

8

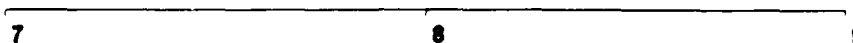
9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM6B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM6B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM7B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



7 8 9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM7B: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



7 8 9

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

**LA/LB TIDAL CIRCULATION STUDY
CM8M: 7 - 8 AUG 1987
10 MINUTE AVERAGE VECTORS**

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM1S: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM1B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM28: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM2M: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM2B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM3B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM3M: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM3B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM4B: 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM68: 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

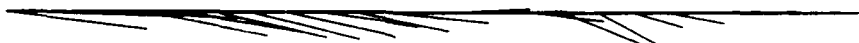
0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM6B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

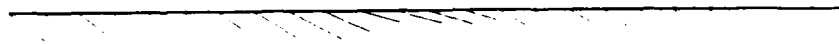
0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY
CM7B: 8 AUG 1987
10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

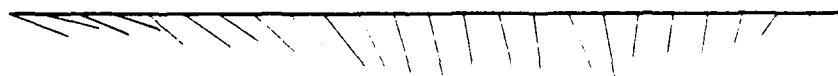
VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM7B: 8 AUG 1987

10 MINUTE AVERAGE VECTORS

CURRENT VELOCITY AND DIRECTION



0000

0400

SCALE: 1.0 FPS

VECTOR POINTS IN DIRECTION OF TRAVEL

LA/LB TIDAL CIRCULATION STUDY

CM8M: 8 AUG 1987

10 MINUTE AVERAGE VECTORS

APPENDIX I: RESIDUAL TIDAL ELEVATION TIME SERIES PLOTS

This appendix contains residual plots of tidal elevation time series. Time series are suffixed with S, M, and B, which stand for surface, middepth, and bottom, respectively.

