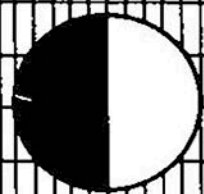


# INSTITUTO DE GEOFISICA



# Calendario Gráfico de Mareas 1991



## OCEANO PACIFICO



SECRETARIA DE MARINA



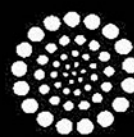
PUERTOS MEXICANOS



LAGUNA VERDE



FONATUR



CONACYT

Cabo San Lucas, B.C.S.

Mazatlán, Sin.

Pto. Vallarta, Jal.

Pto. Peñasco, Son.

Guaymas, Son.

Topolobampo, Sin.

Pto. Angel, Oax.

Salinas Cruz, Oax.

Pto. Madero, Chis.

**CALENDARIO GRAFICO DE MAREAS 1991**  
**Océano Pacífico**

El pronóstico de mareas de Salina Cruz, Oax., prácticamente puede ser utilizado en todos los lugares de la costa comprendidos desde Salina Cruz hasta Balboa, Panamá, mediante la aplicación de ciertas correcciones al tiempo y a la altura de las pleamares y bajamares (puntos máximos y mínimos de la gráfica de mareas). El progreso total de la marea se dirige hacia el Sur aumentando de amplitud rápidamente hasta alcanzar su valor máximo en el Golfo de Panamá, en cambio la fase varía muy lentamente, o sea que las horas de las pleamares y bajamares en toda esta zona casi ocurre simultáneamente.

**DIFERENCIAS:**

Las diferencias en tiempo y altura se aplicarán según su signo a las pleamares y bajamares de la gráfica de Salina Cruz, para obtener las del lugar deseado. Las horas encontradas estarán referidas al meridiano en uso del lugar.

**DIFERENCIAS DE TIEMPO**

ESTACIONES	PLEAMAR SUP.		PLEAMAR INF.		BAJAMAR INF.		BAJAMAR SUP.	
	Hora	Min.	Hora	Min.	Hora	Min.	Hora	Min.
Champerico, Guatemala	00	00	00	00	00	00	00	00
San José, Guatemala	00	00	00	00	00	00	00	00
La Unión, El Salvador	+ 00	20	+ 00	30	00	00	+ 00	20
Puntarenas, Costa Rica	+ 00	20	00	00	-00	10	+ 00	10
Balboa, Zona del Canal de Panamá	+ 01	20	+ 01	00	+ 01	00	+ 01	30

**DIFERENCIAS DE ALTURA**

ESTACIONES	PLEAMAR SUP.		PLEAMAR INF.		BAJAMAR INF.		BAJAMAR SUP.	
	Pies	m	Pies	m	Pies	m	Pies	m
Champerico, Guatemala	+ 1.1	+ 0.34	+ 1.1	+ 0.34	0.0	0.00	0.0	0.00
San José, Guatemala	+ 1.6	+ 0.49	+ 1.7	+ 0.52	+ 0.1	+ 0.03	+ 0.1	+ 0.03
La Unión, El Salvador	+ 5.0	+ 1.52	+ 5.1	+ 1.55	0.0	0.00	+ 0.4	+ 0.12
Puntaneras, Costa Rica	+ 4.4	+ 1.34	+ 4.5	+ 1.37	-0.1	-0.03	+ 0.3	+ 0.09
Balboa, Zona del Canal de Panamá	+ 10.5	+ 3.20	+ 10.4	+ 3.17	+ 0.4	+ 0.12	+ 1.2	+ 0.36

**INSTITUTO DE GEOFÍSICA**

*Dr. Gerardo Suárez*  
Director

*Francisco Graffé Schmit*  
Responsable editorial

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*Ing. Francisco Grivel Piña*  
Jefe del Servicio Mareográfico  
Instituto de Geofísica de la U.N.A.M.

Circuito Exterior, Ciudad Universitaria.  
04510 México, D.F.  
Teléfono: 550-52-15 Ext. 4362.  
Fax (5) 550-24-86.  
Telex 1760197 IGSSME



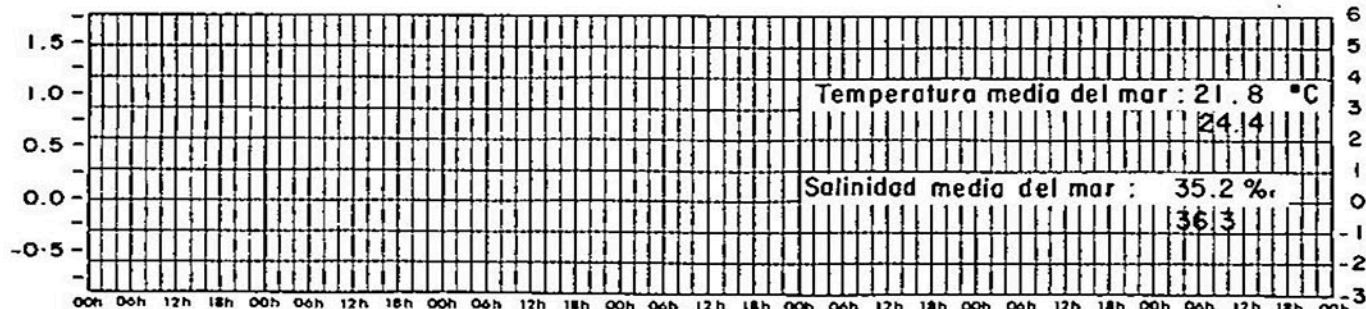
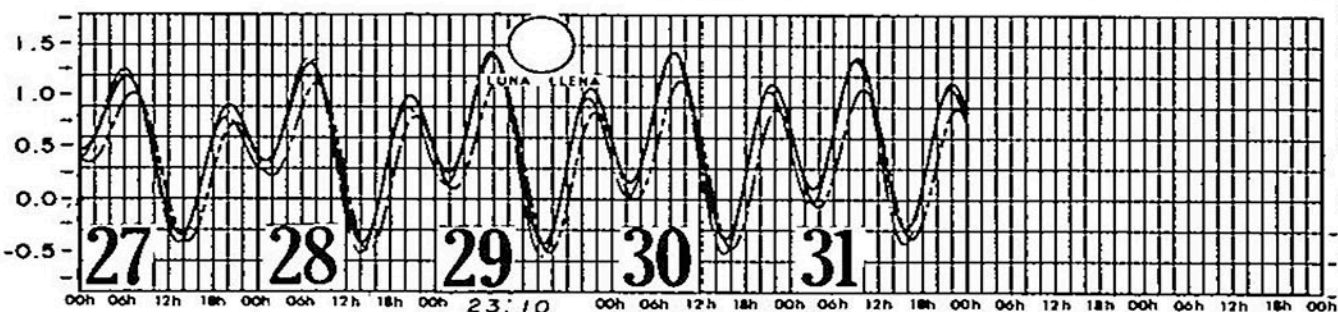
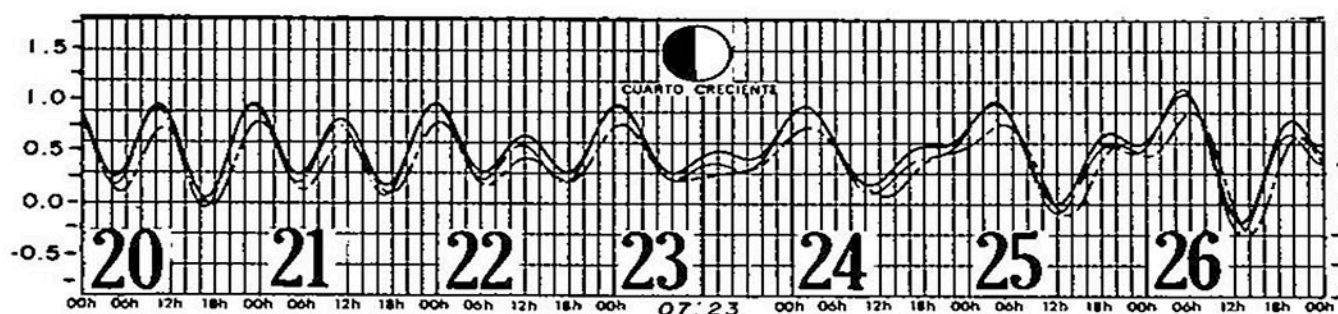
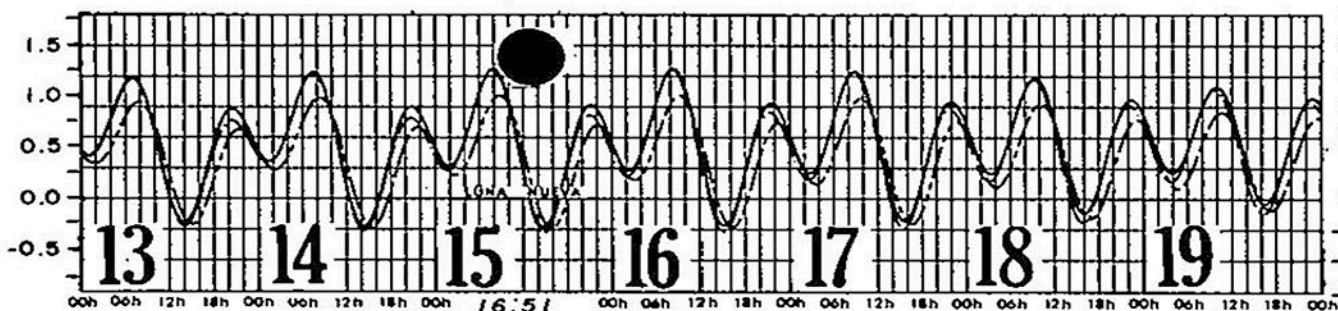
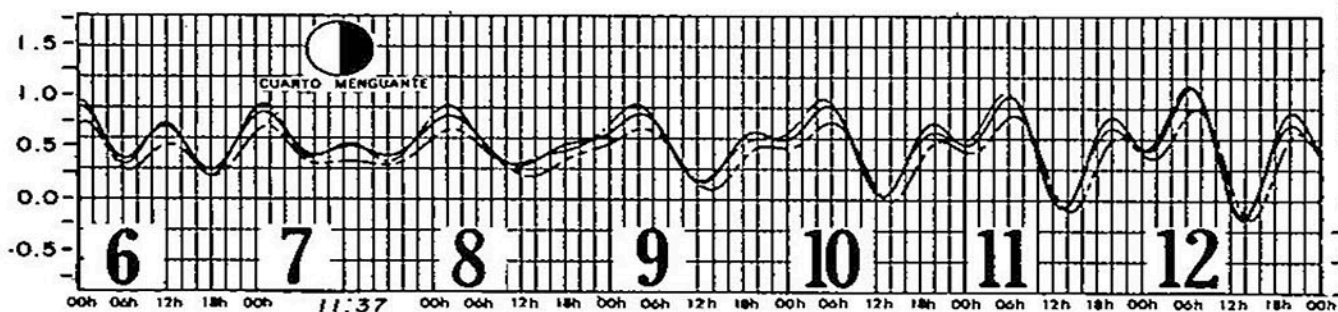
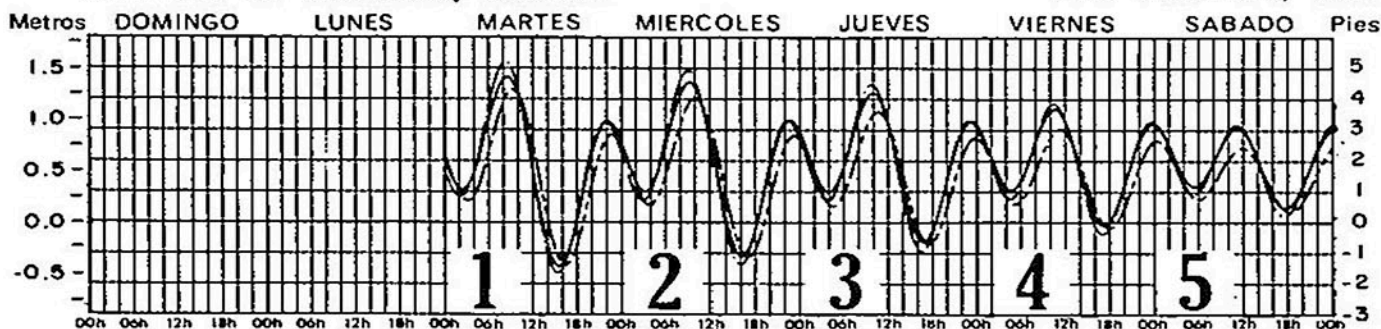


# ENERO 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

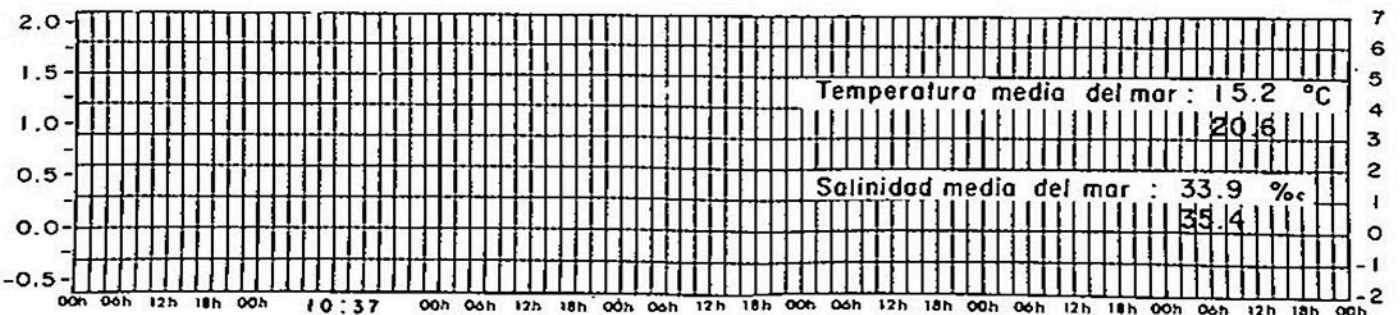
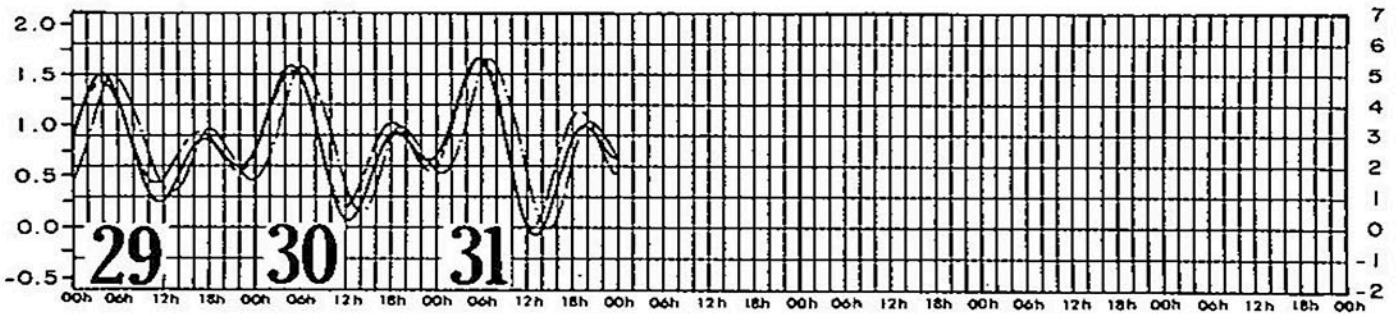
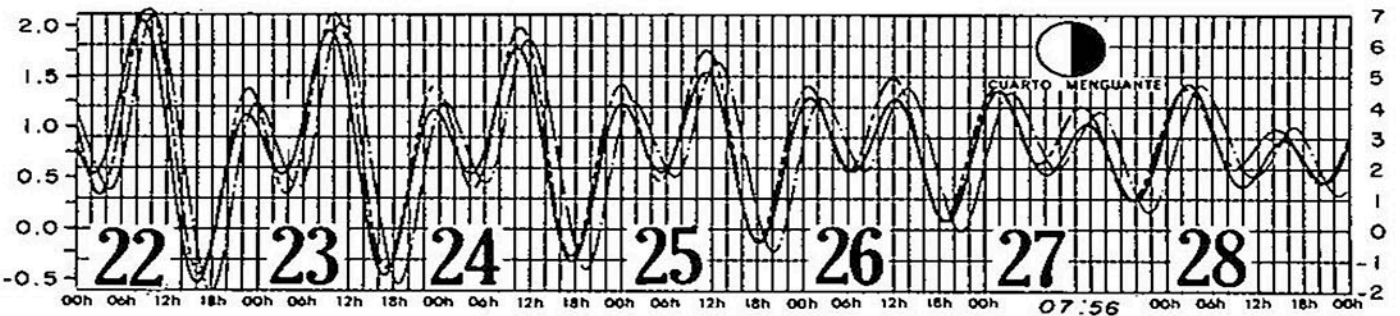
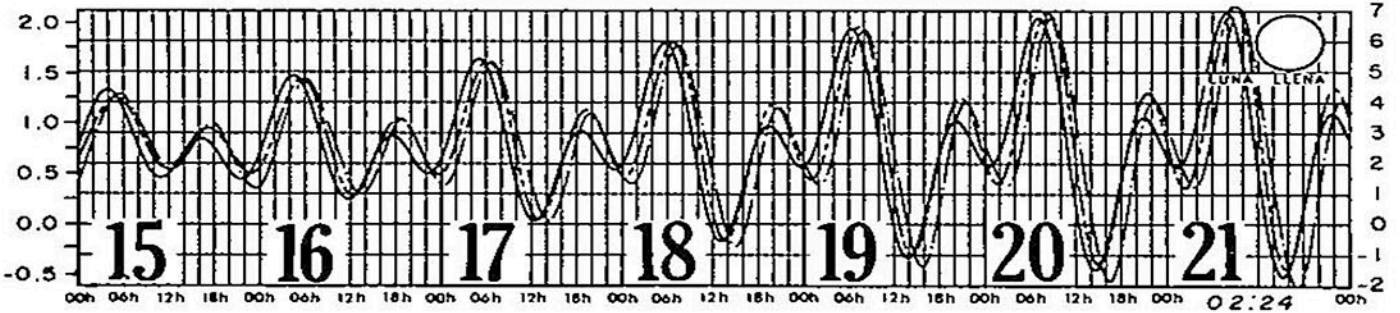
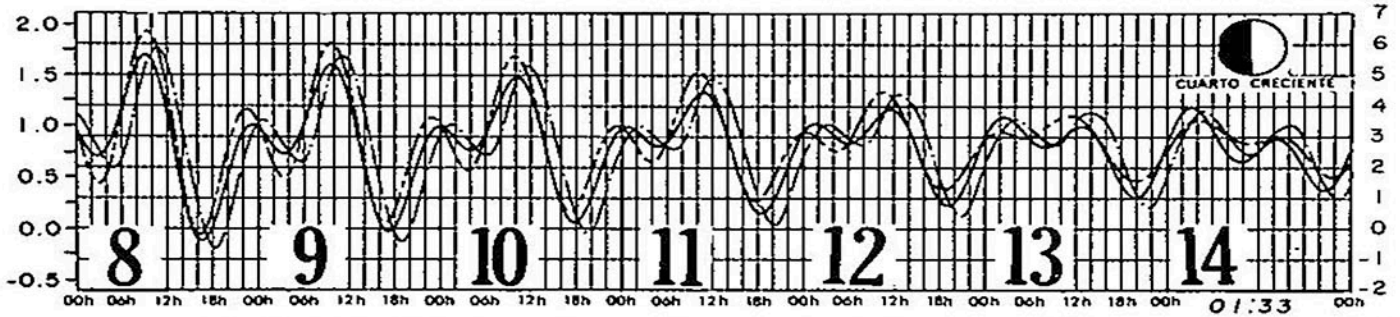
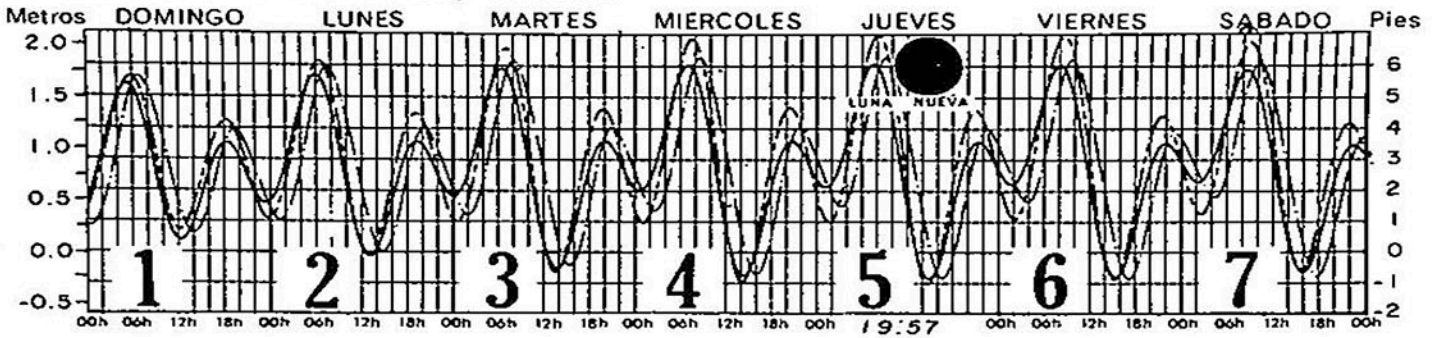


# DICIEMBRE 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN. CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



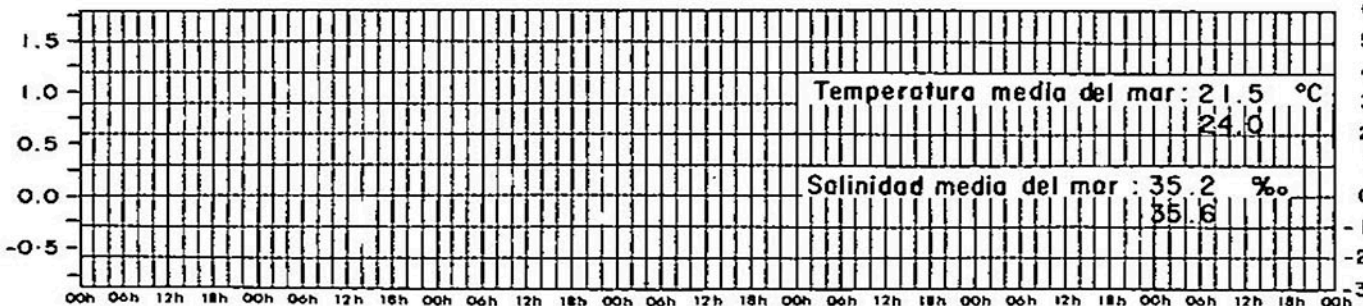
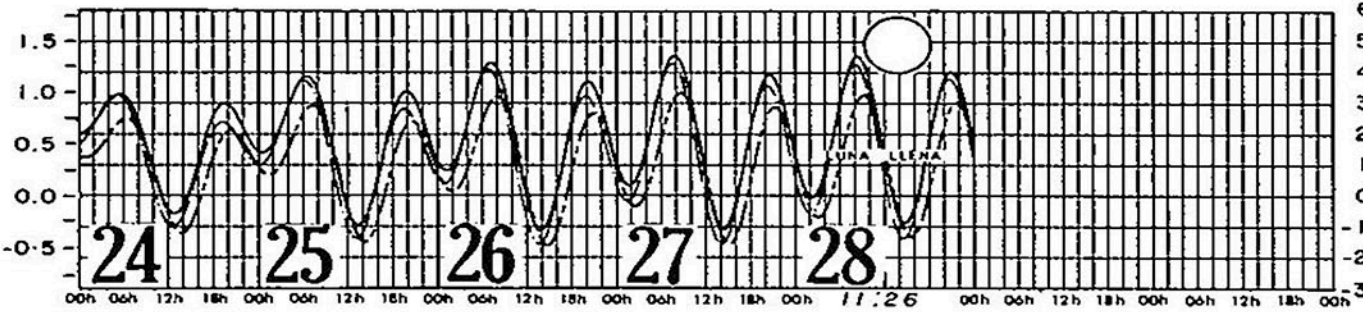
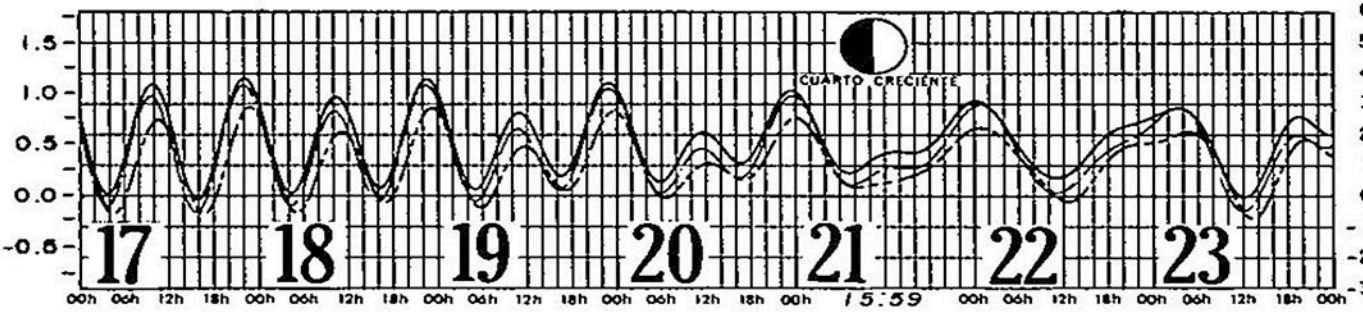
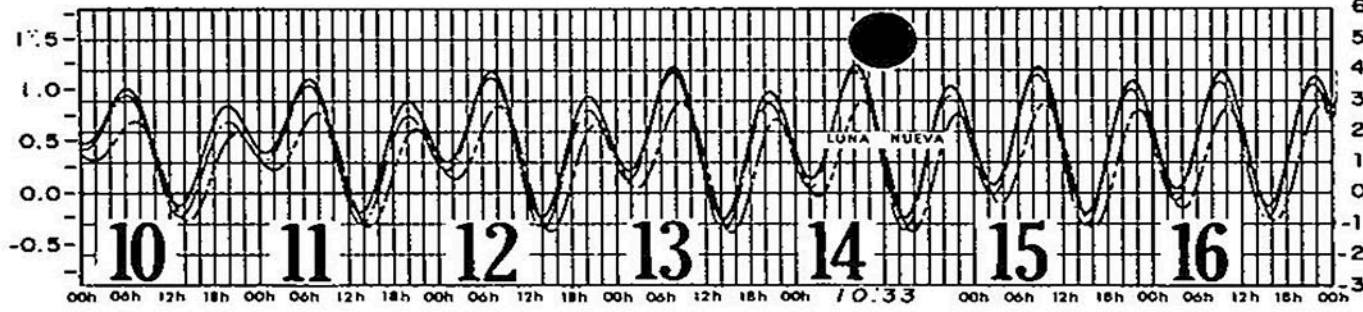
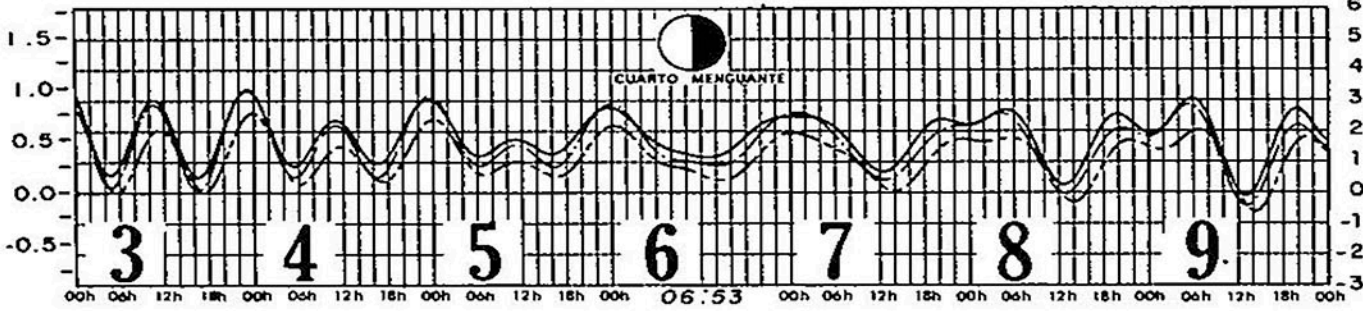
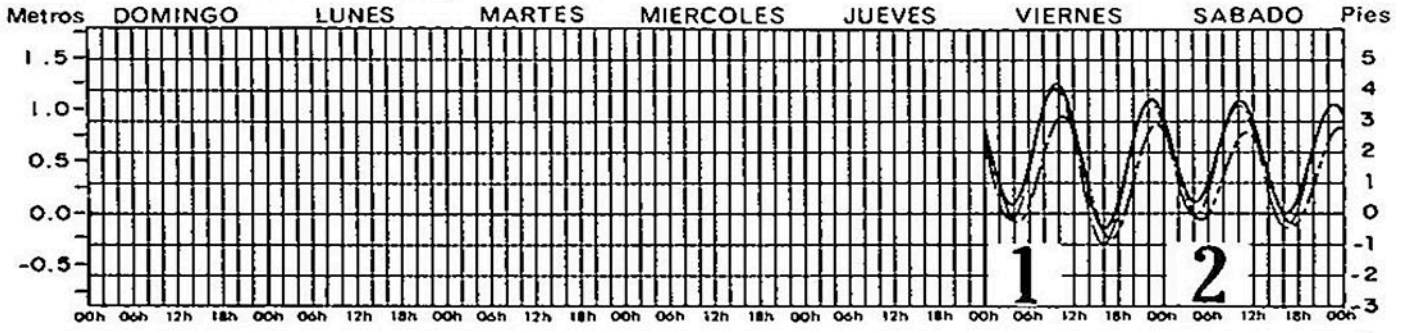


# FEBRERO 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

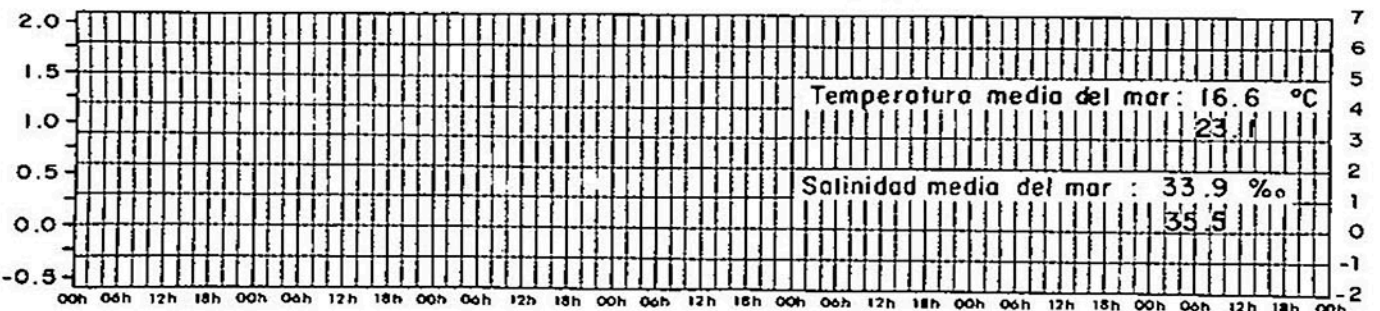
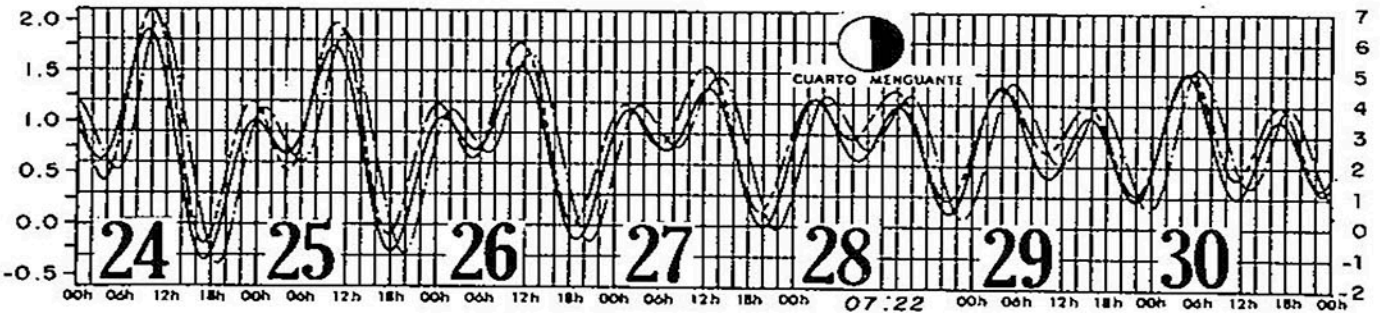
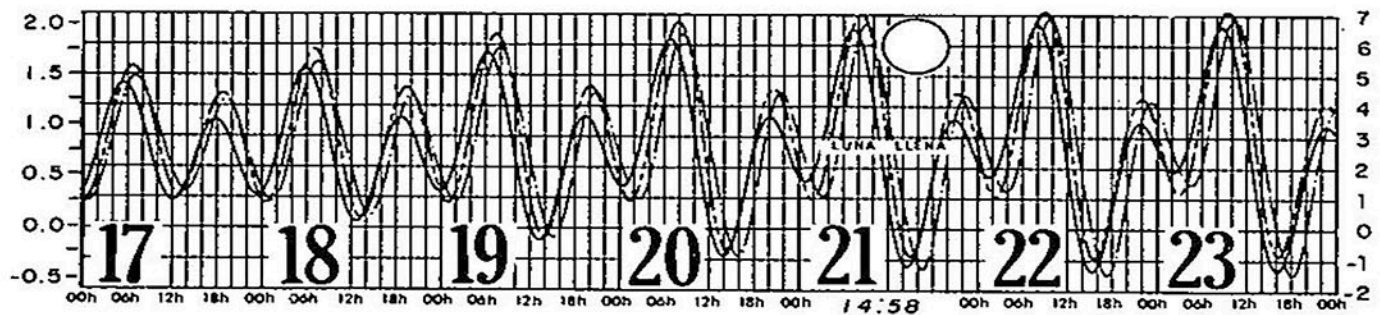
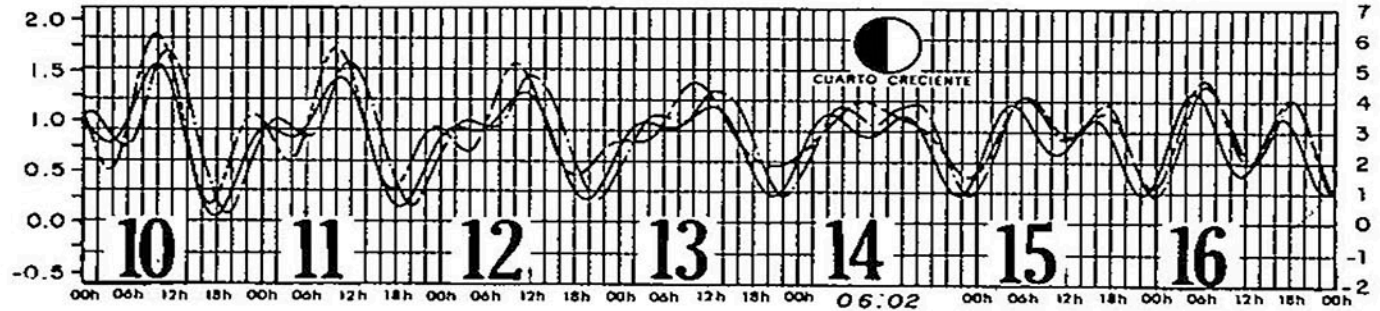
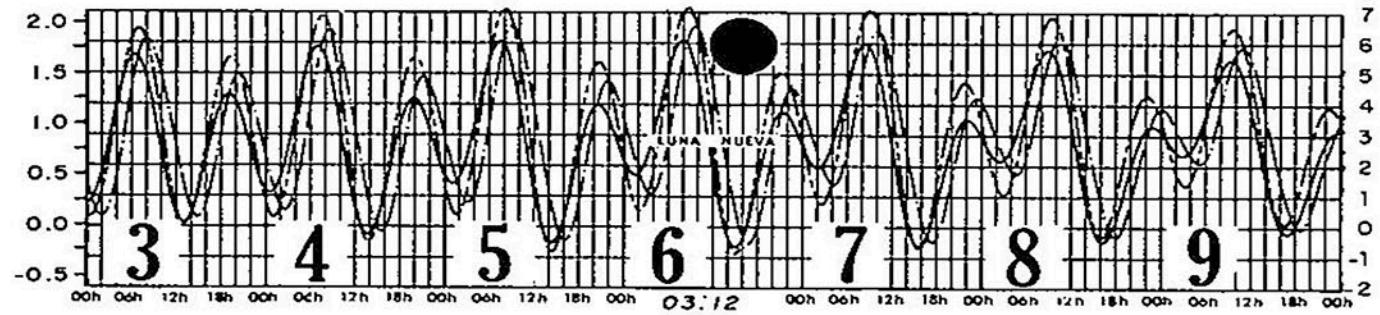
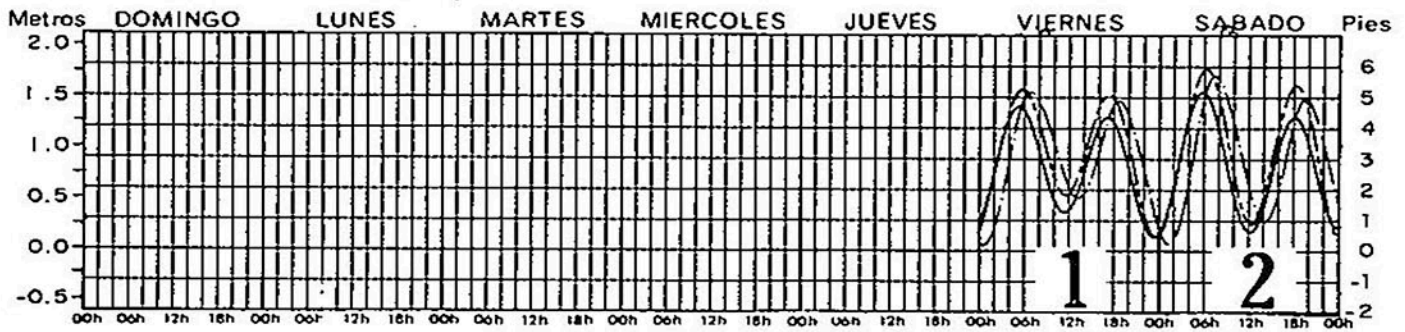


# NOVIEMBRE 1991

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GRO. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



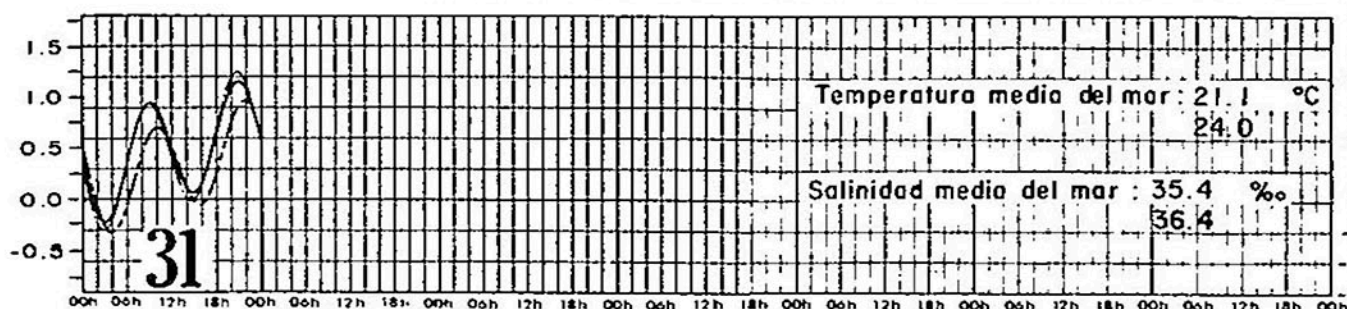
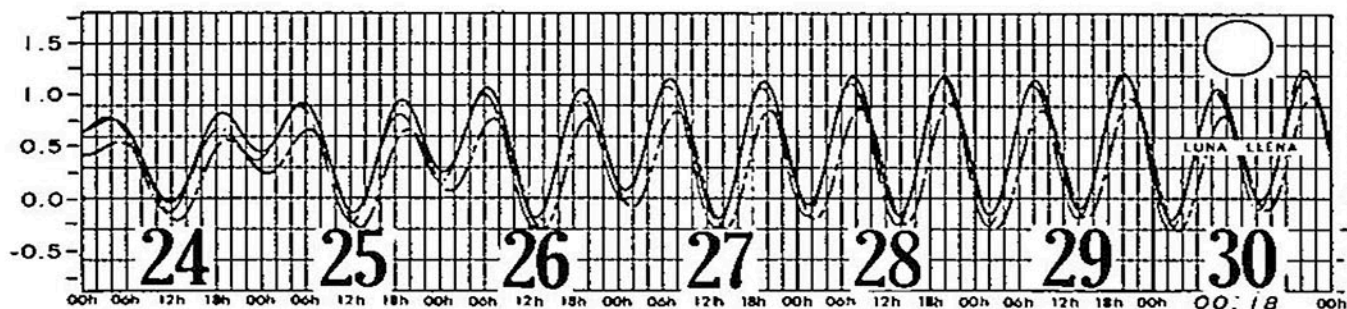
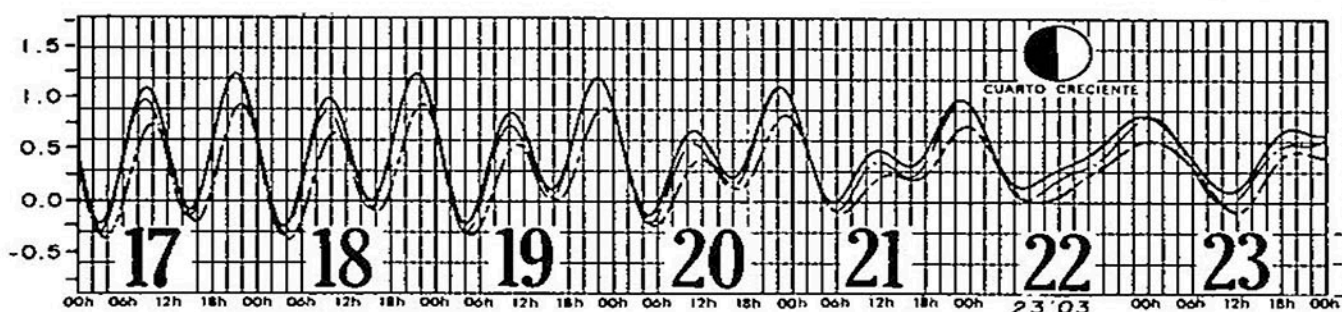
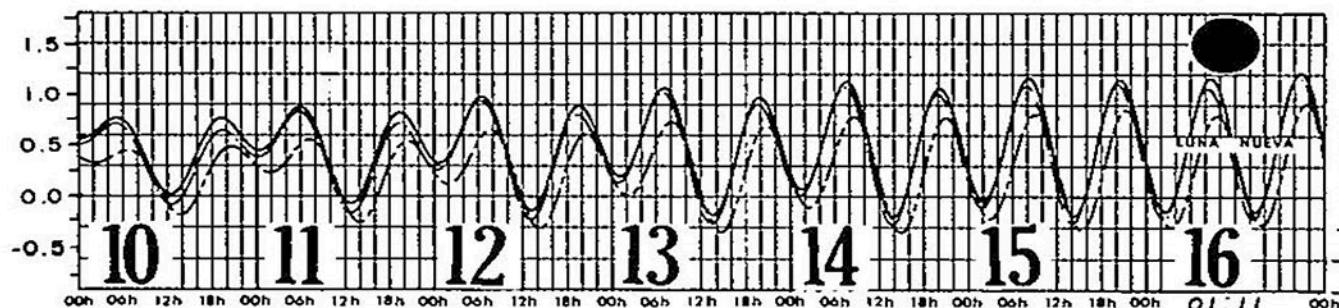
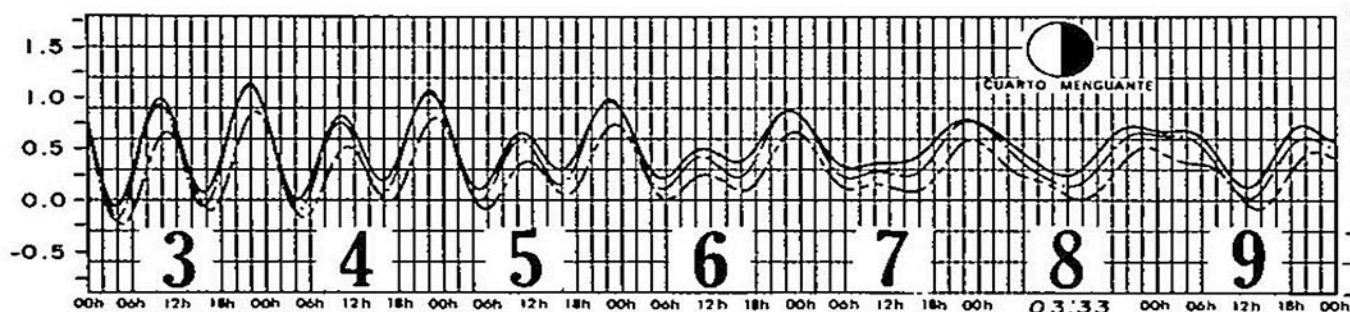
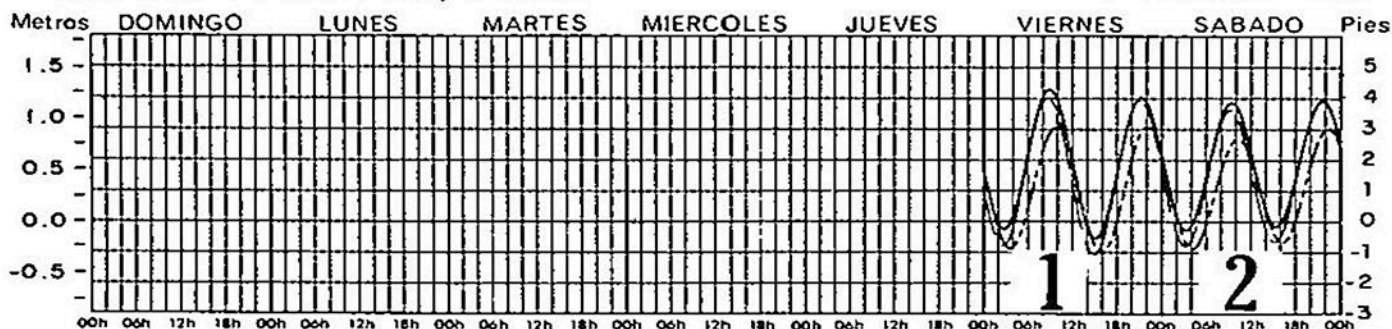


# MARZO 1991

CABO SAN LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.





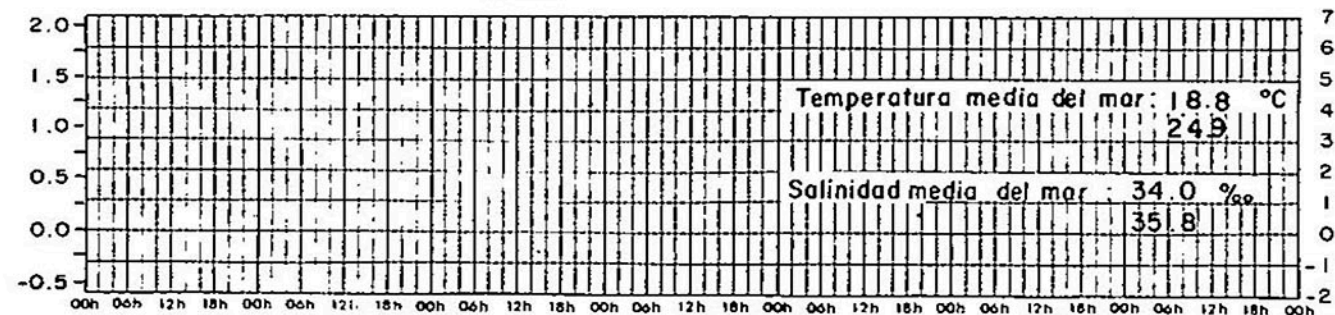
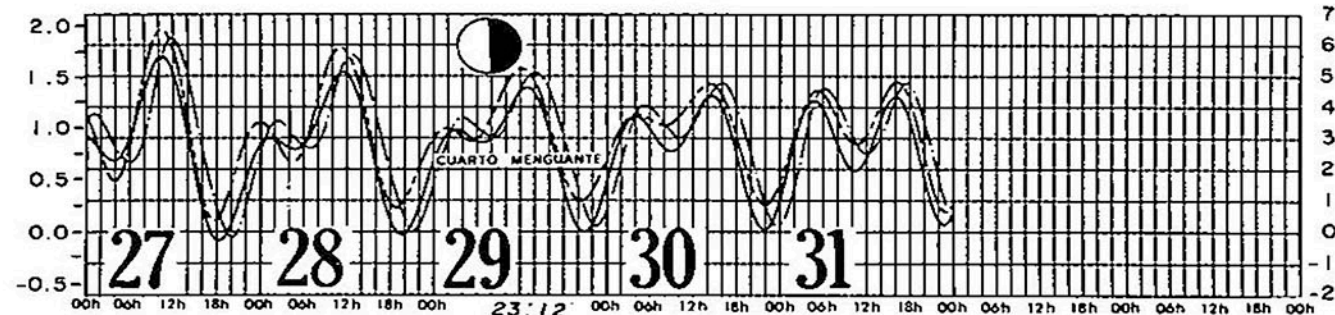
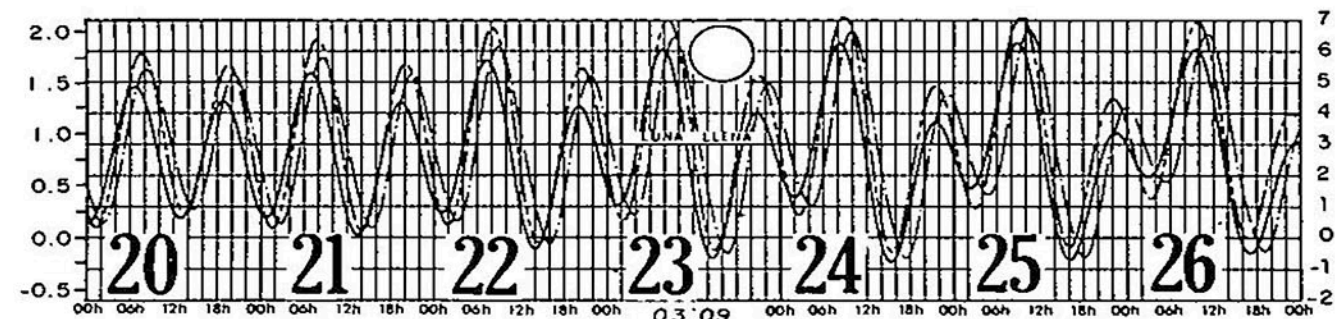
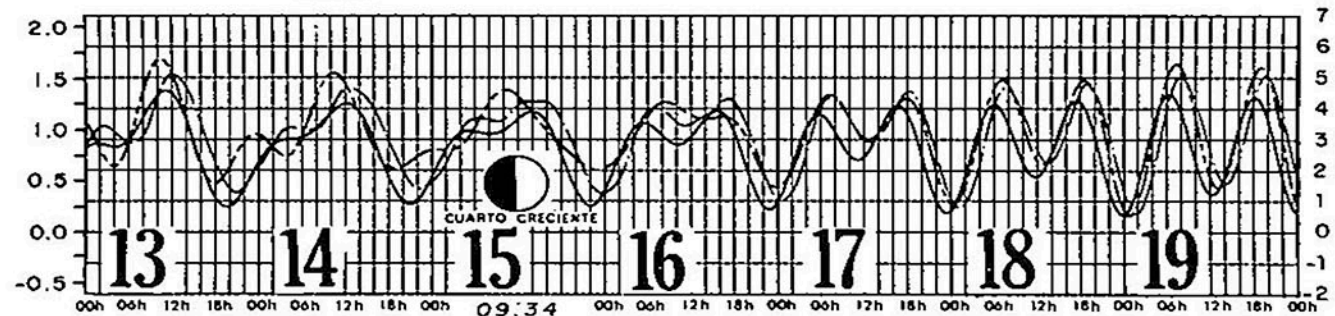
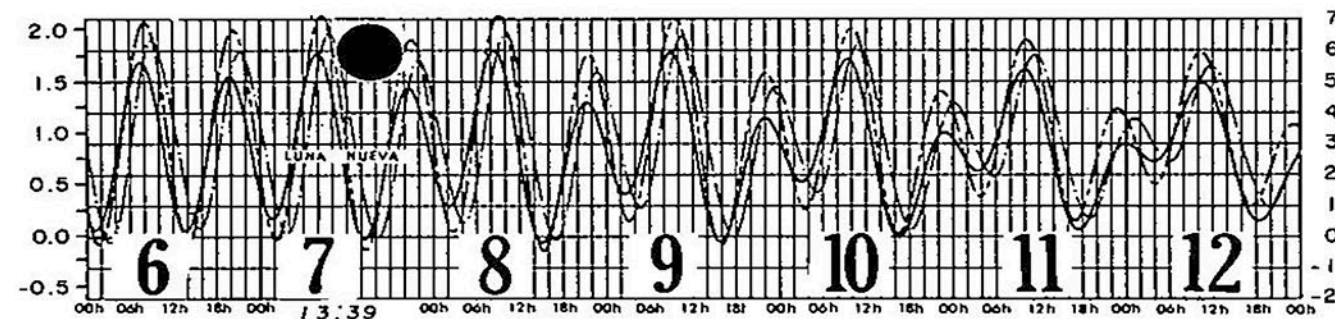
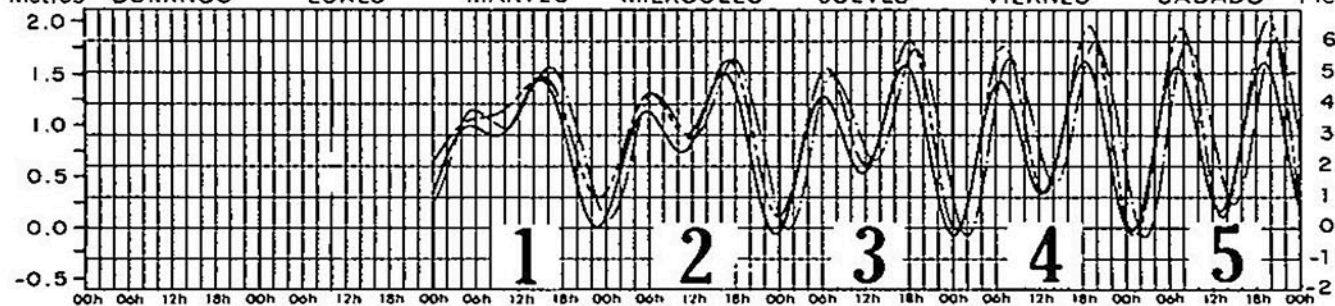
# OCTUBRE 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN. CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

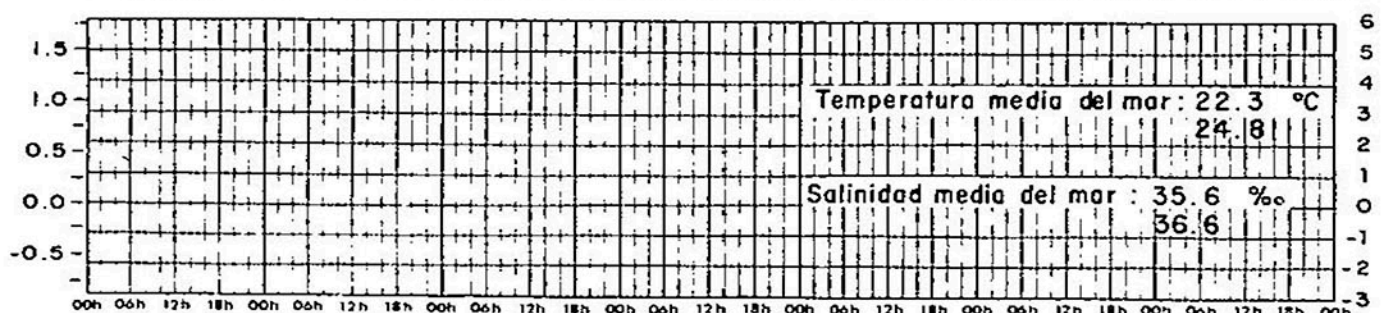
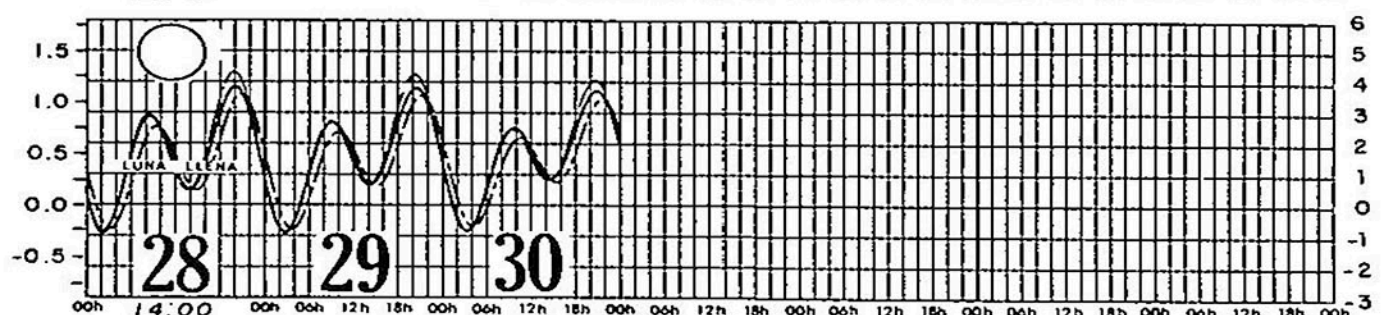
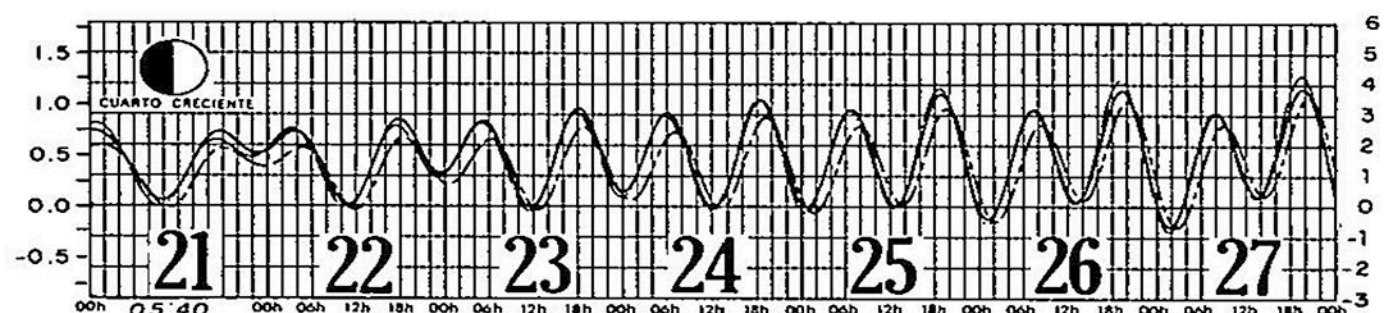
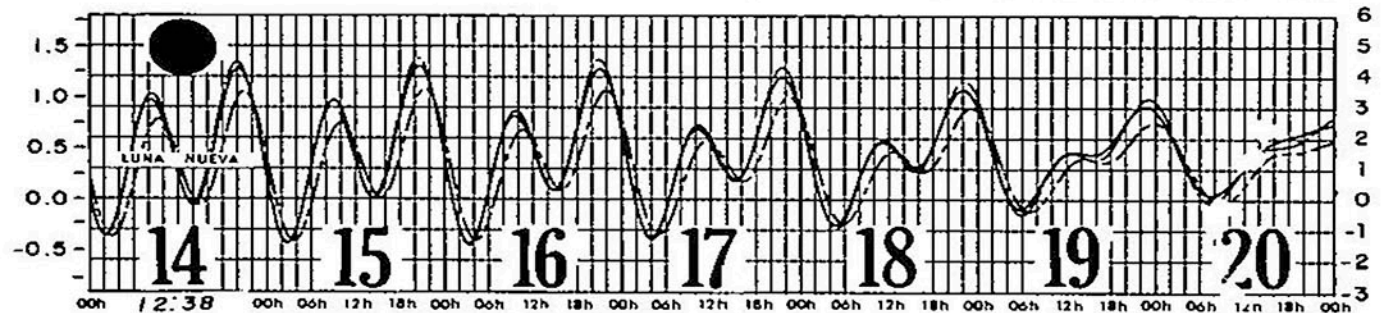
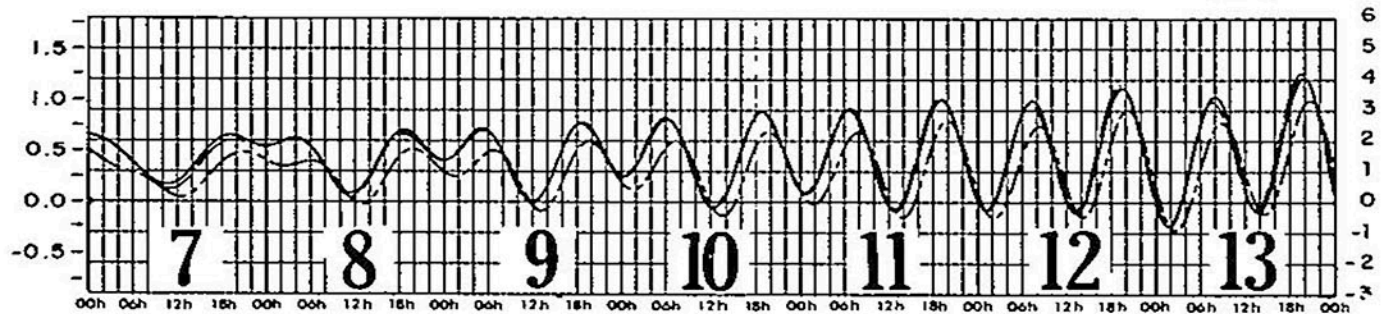
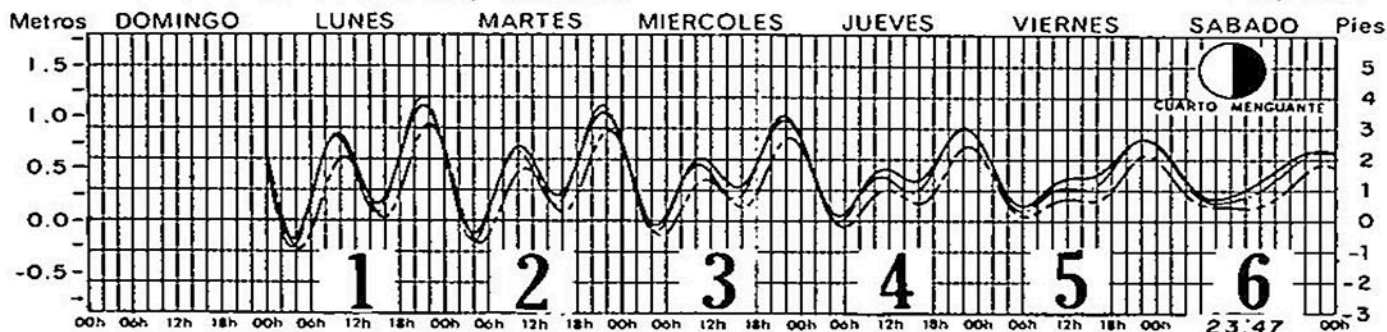


# ABRIL 1991

CABO SAN LUCAS, B.C.S.  
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PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.



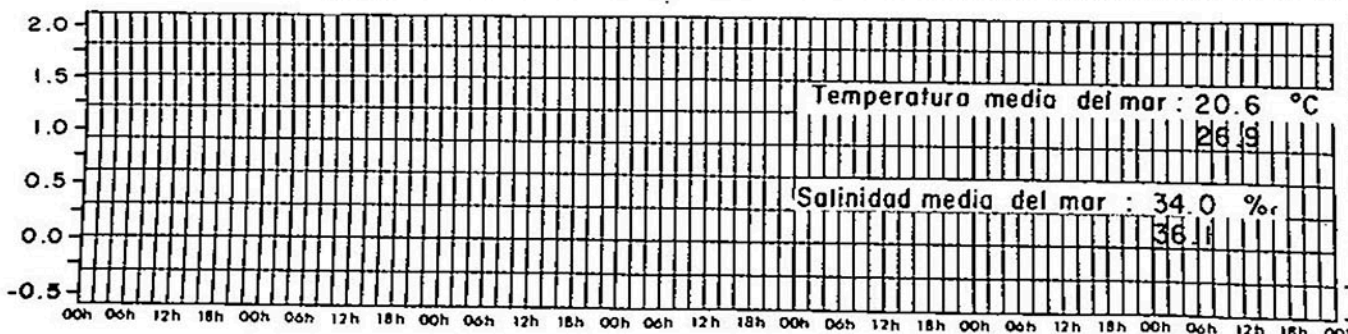
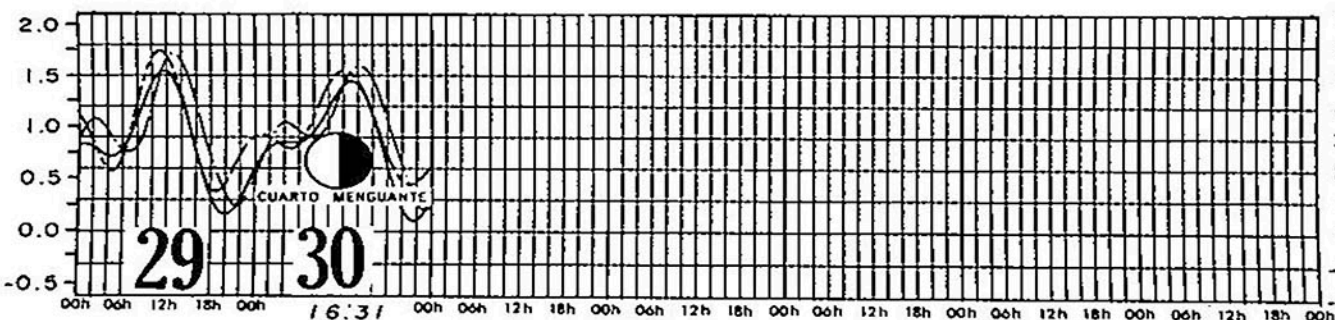
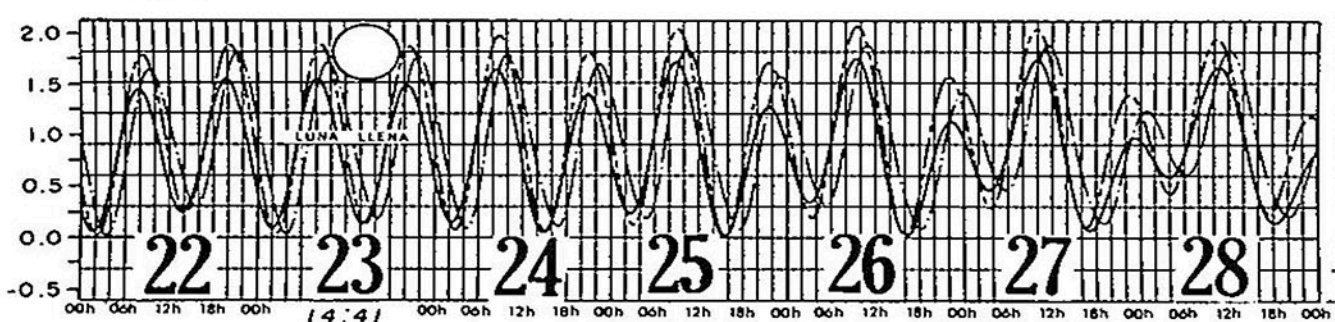
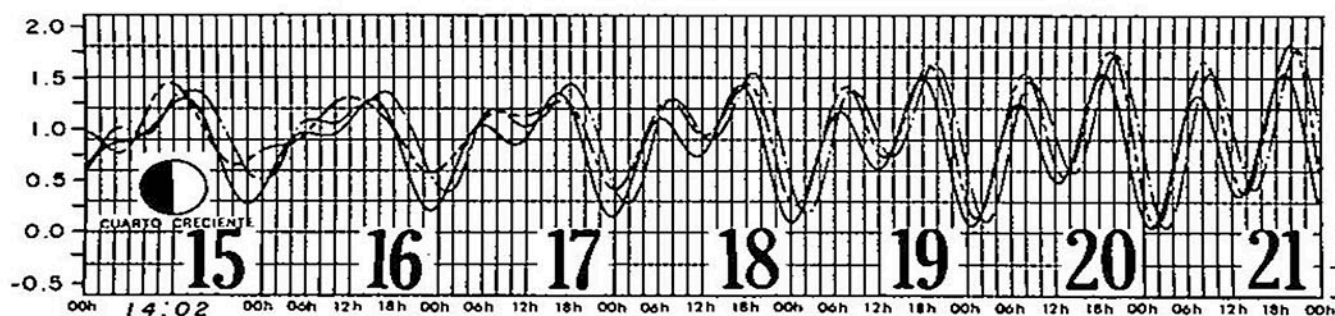
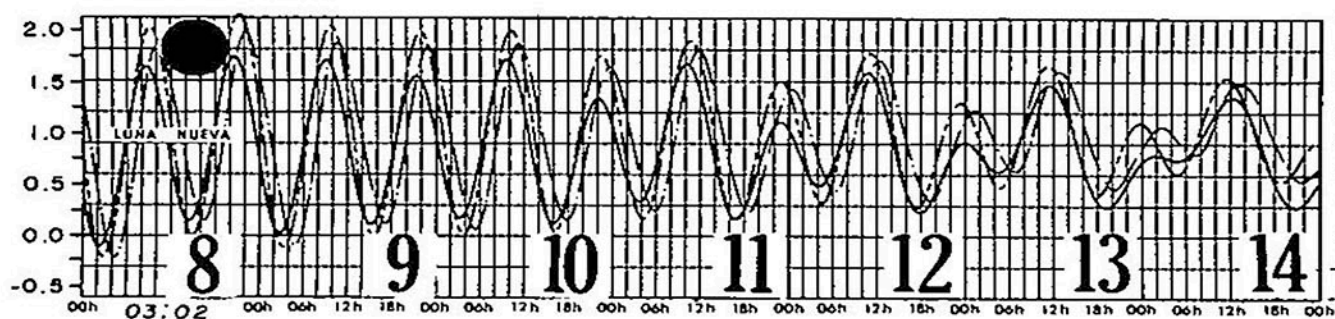
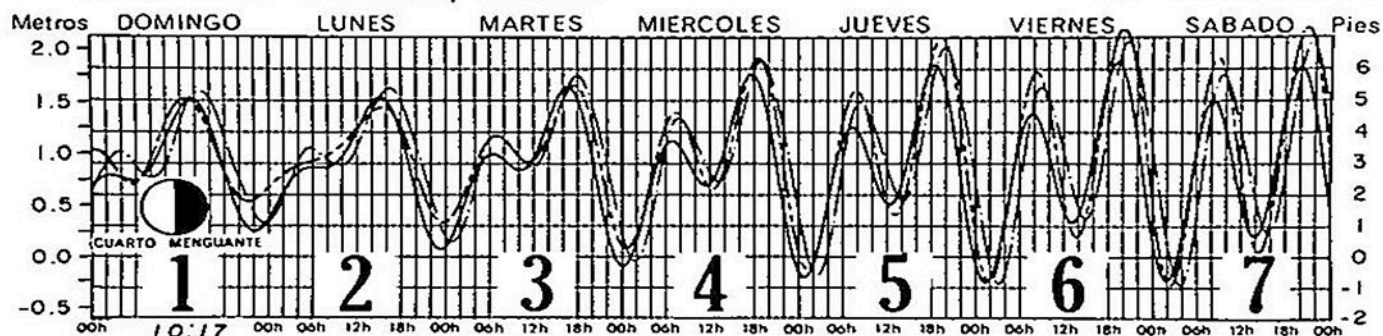


# SEPTIEMBRE 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

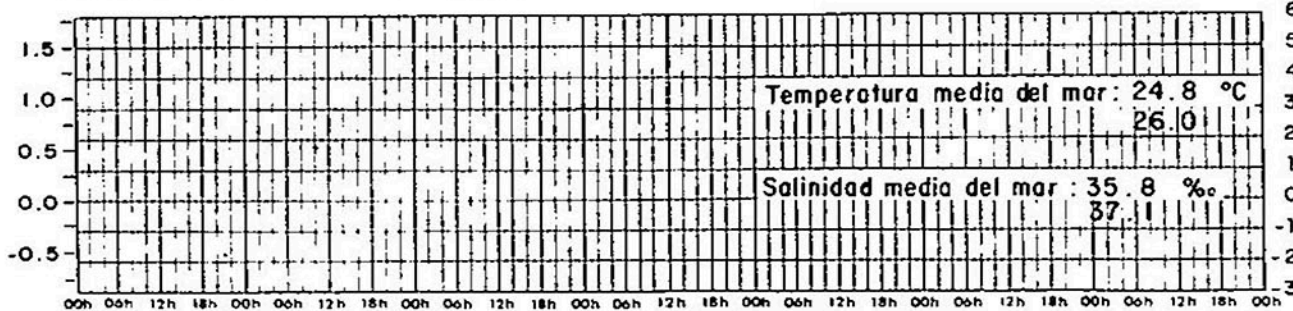
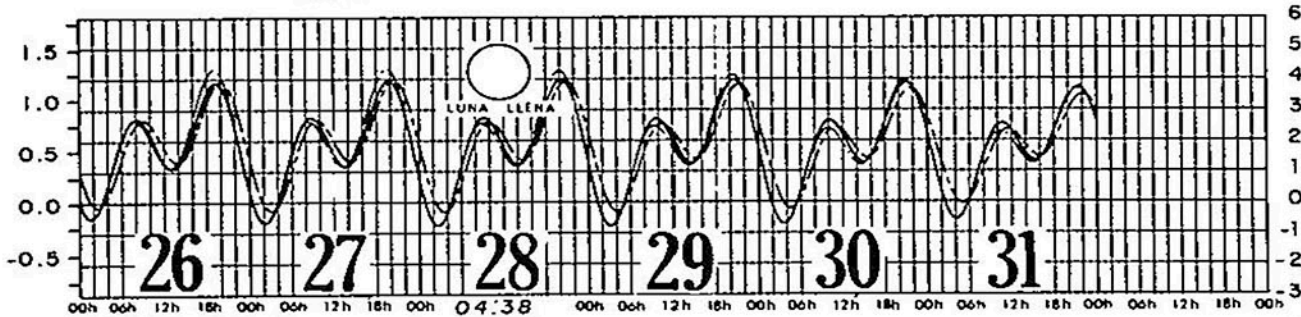
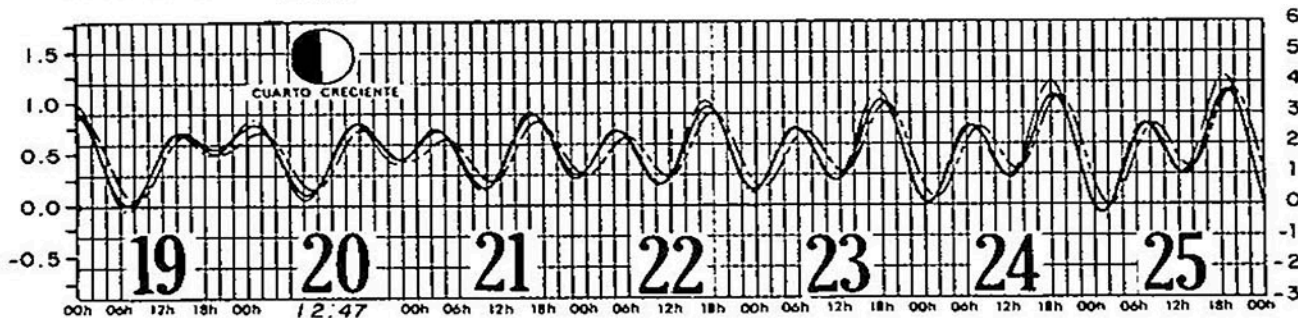
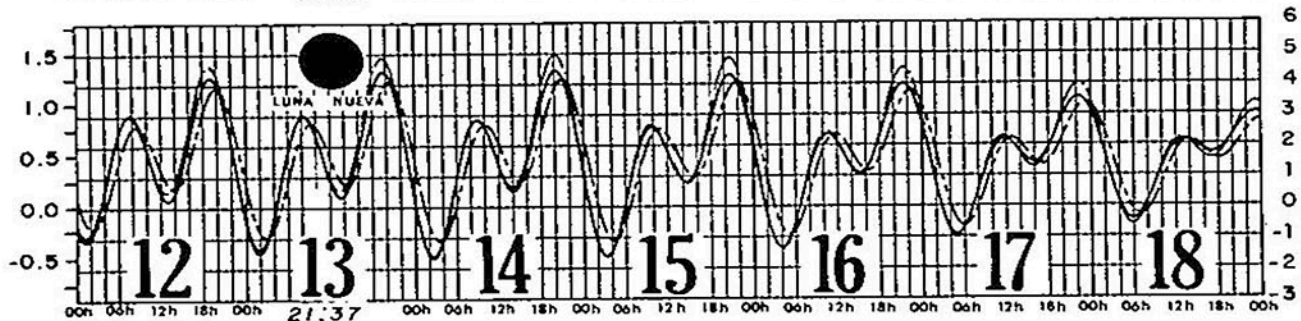
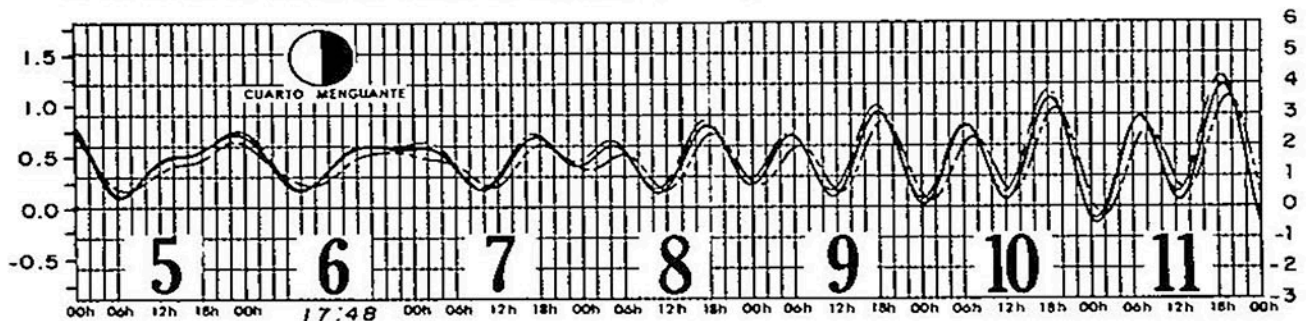
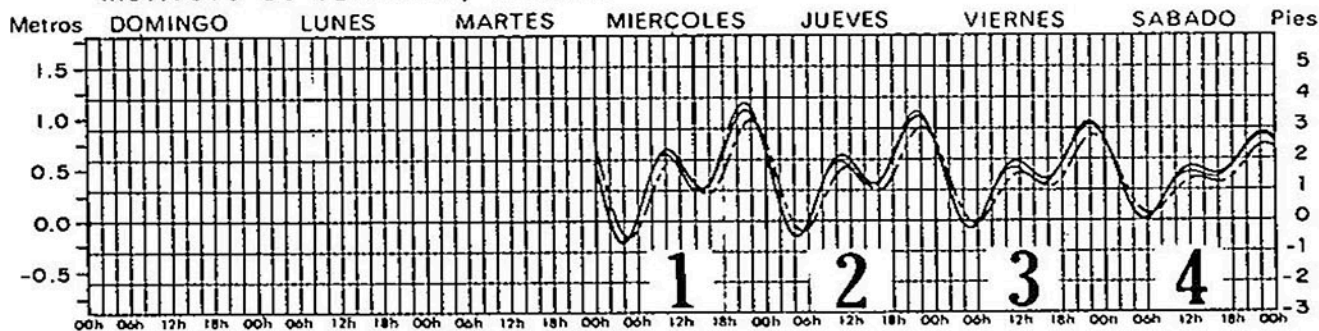


# MAYO 1991

CABO SAN LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA : N.B.M.I.



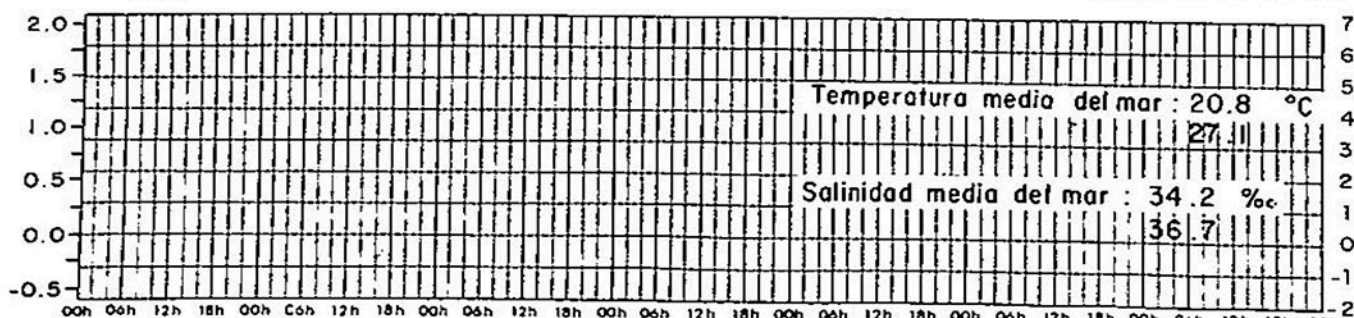
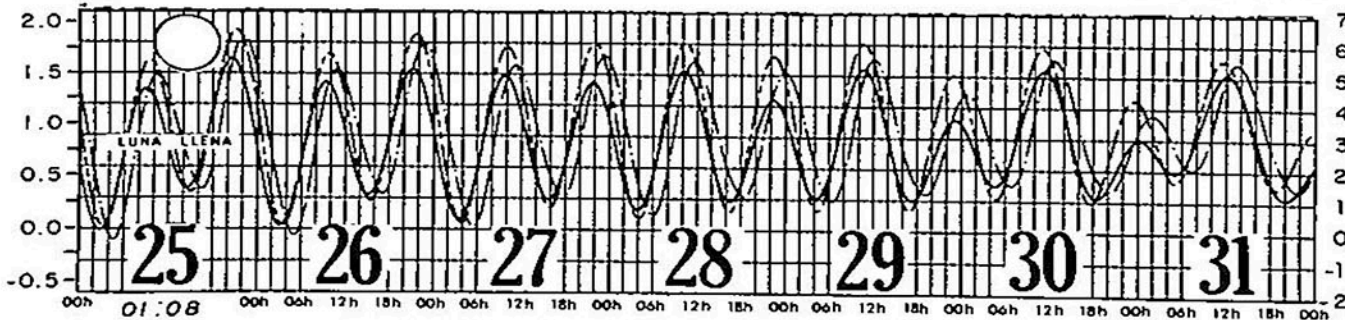
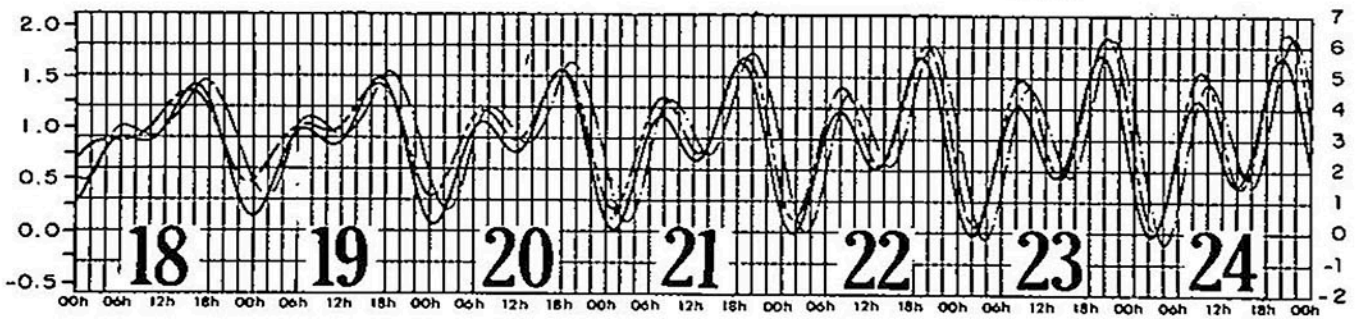
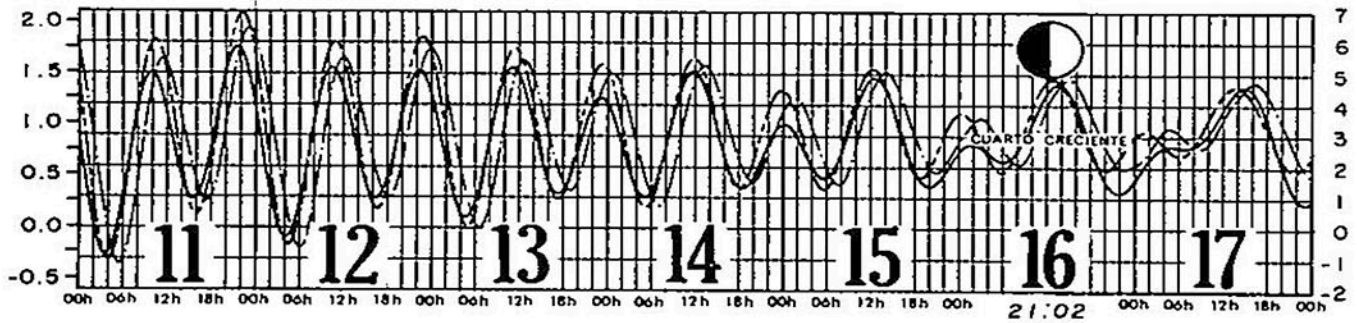
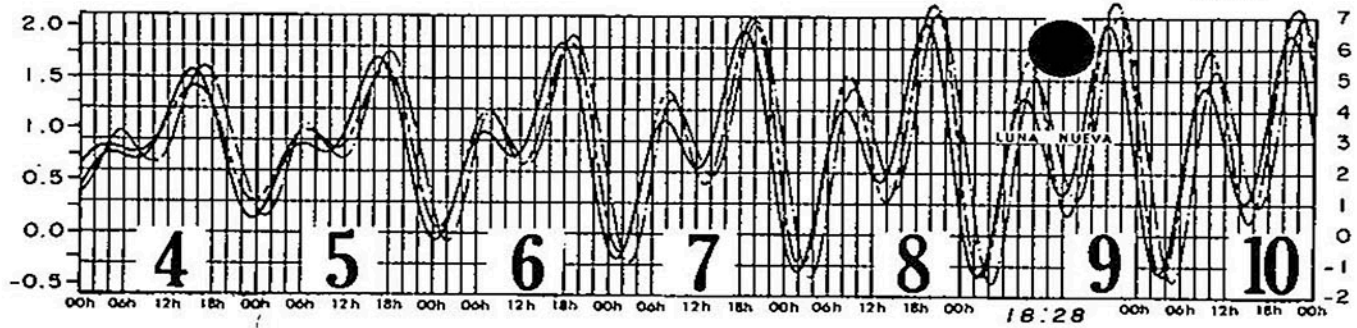
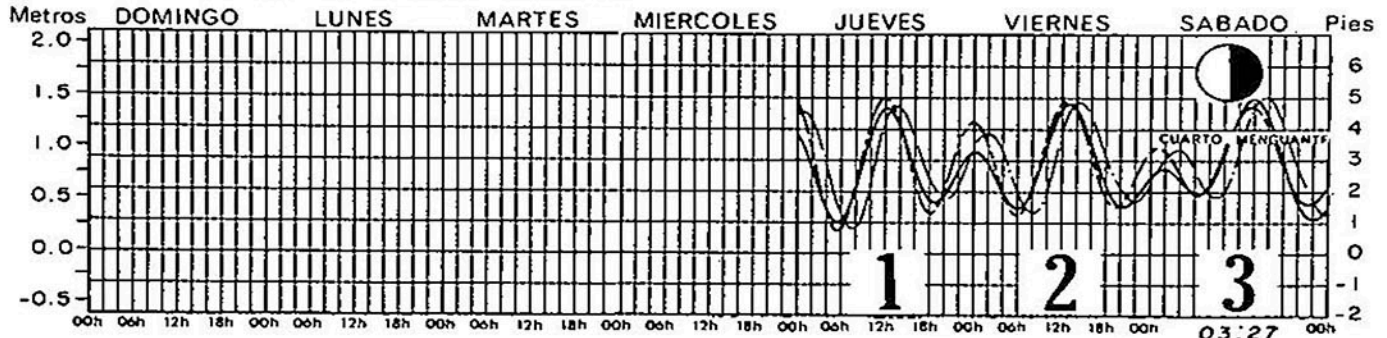


# AGOSTO 1991

ENSENADA, B.C.  
GRD. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.



INSTITUTO DE GEOFISICA. U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



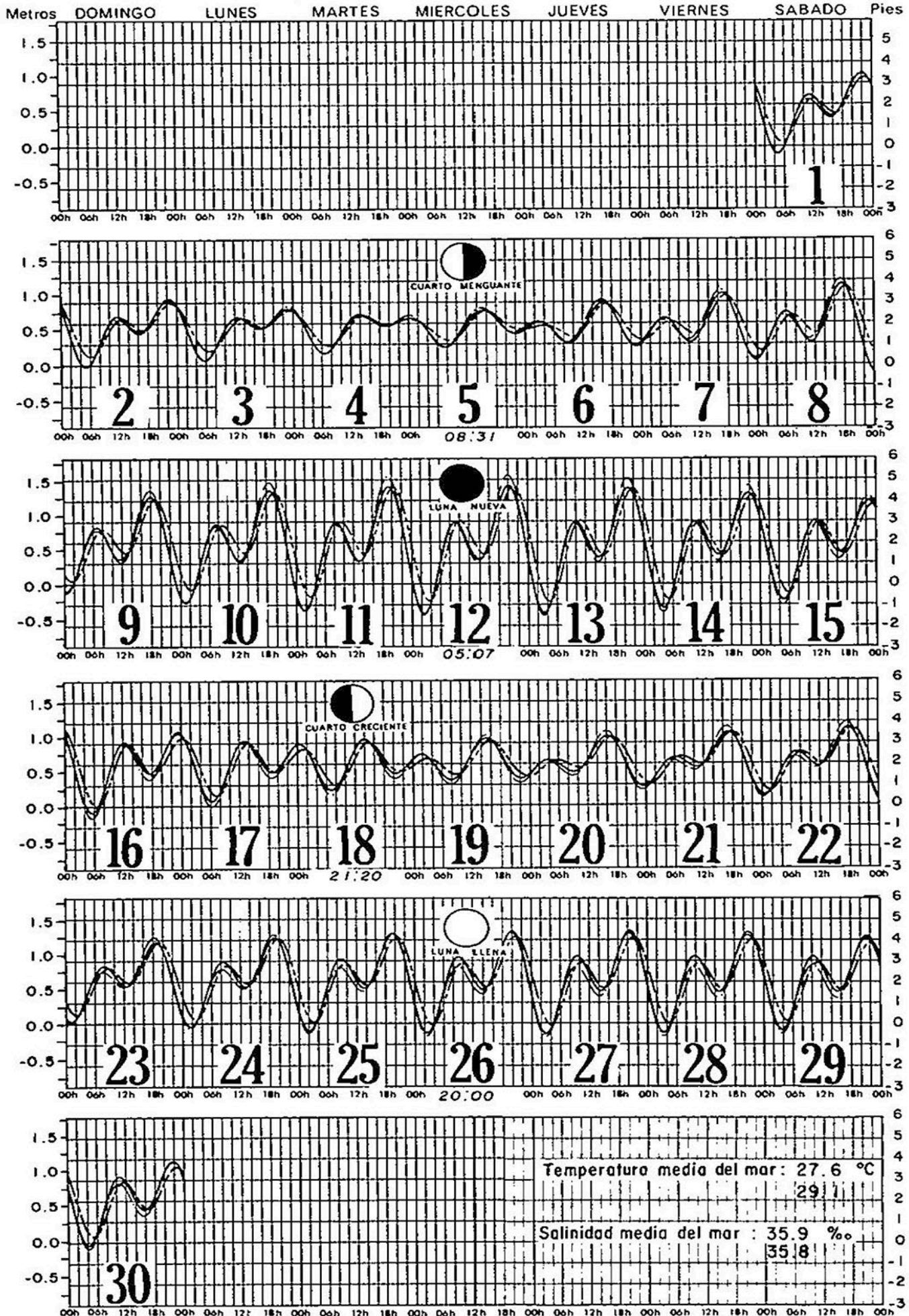


# JUNIO 1991

CABO SAN LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

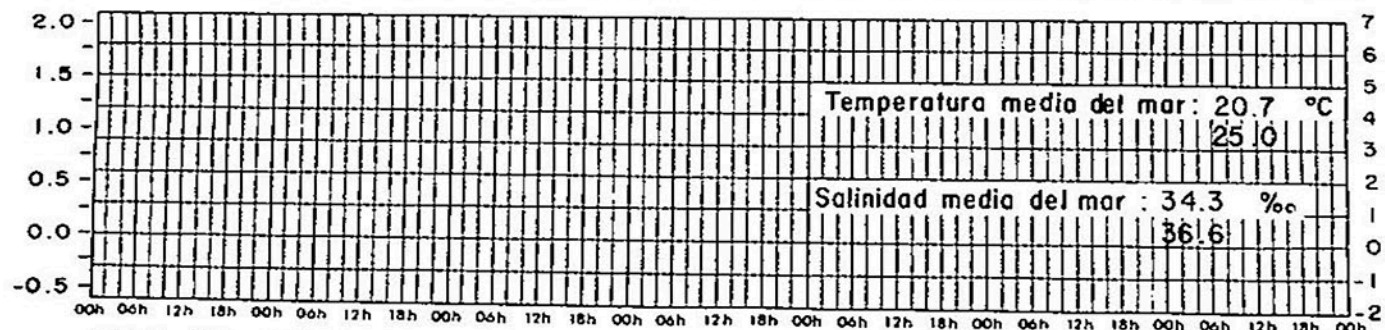
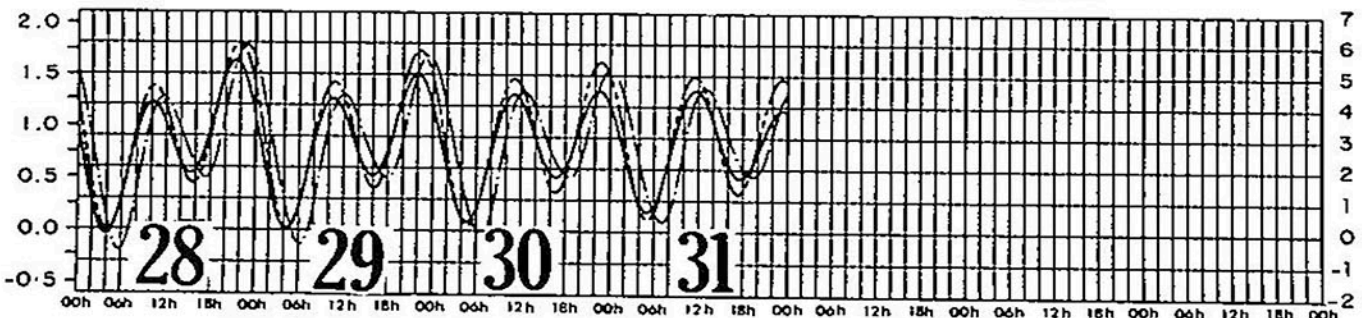
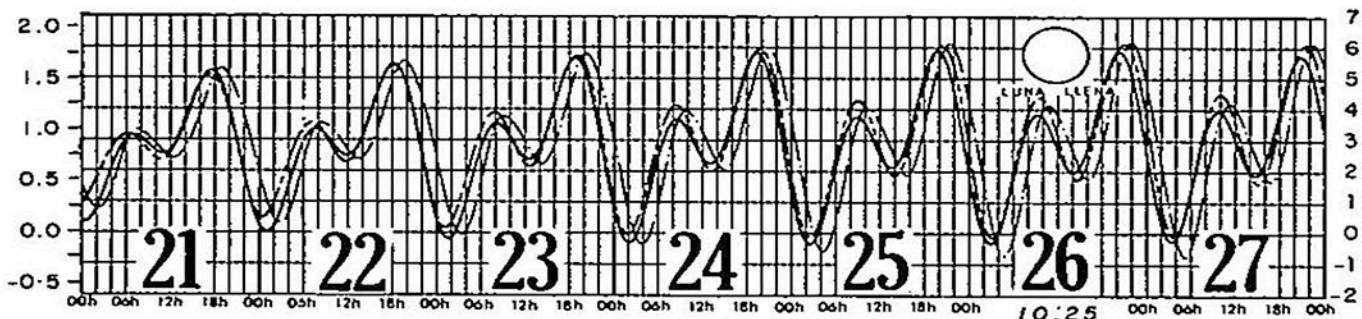
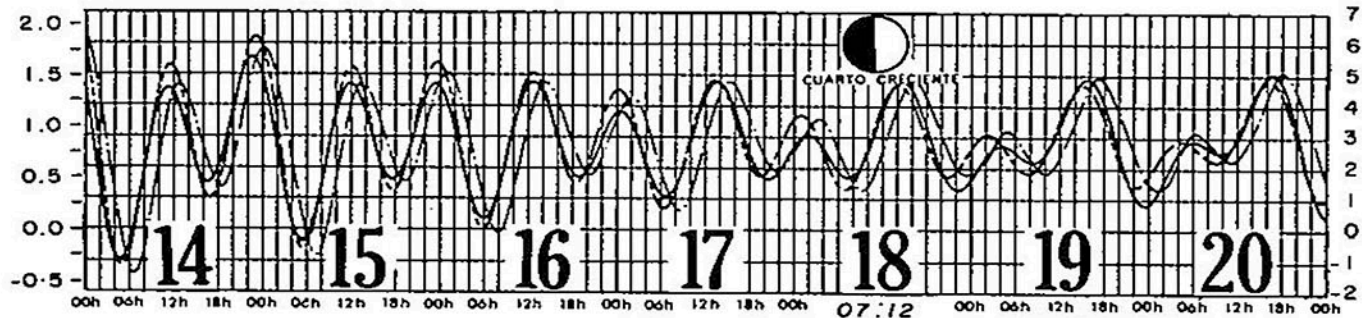
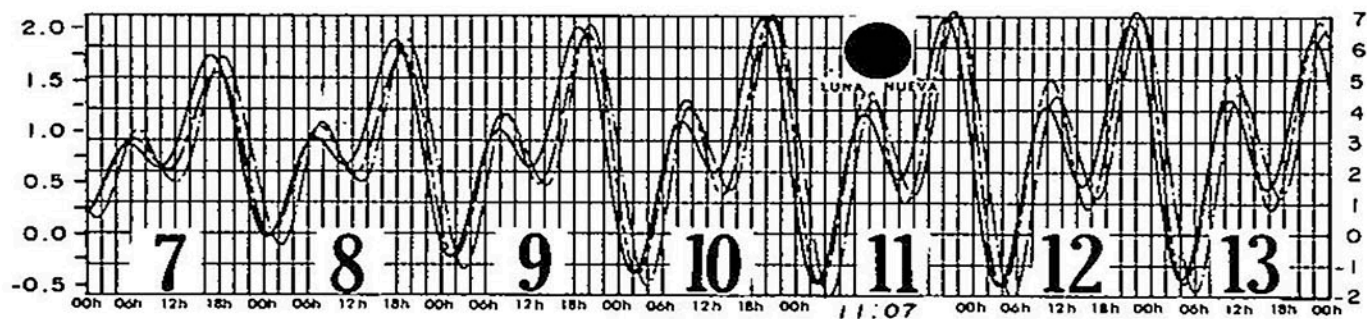
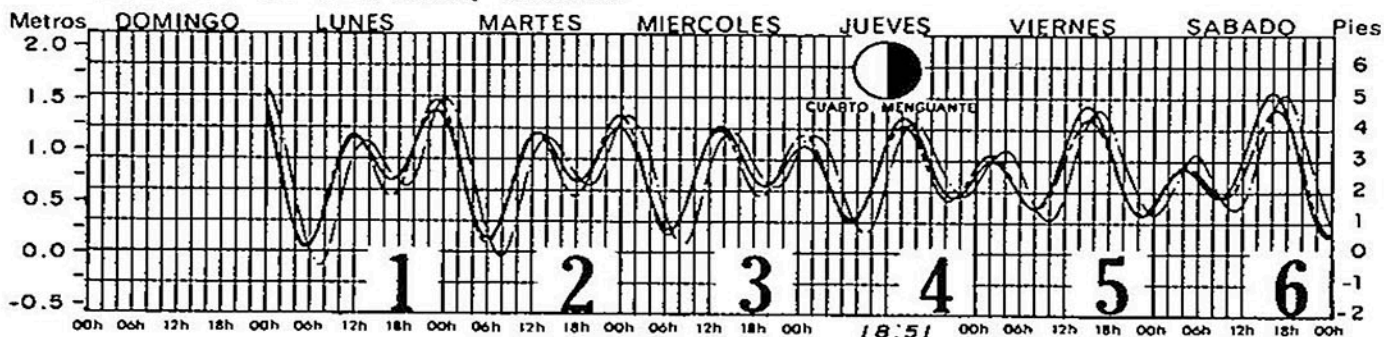


# JULIO 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

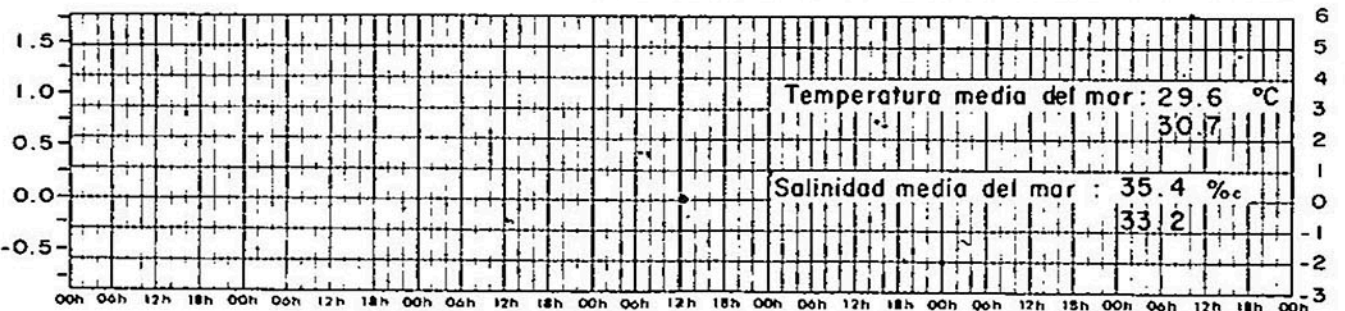
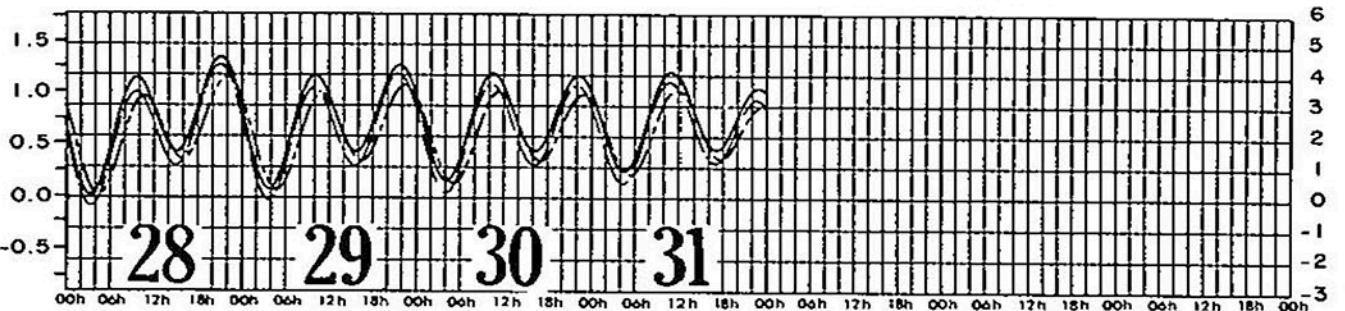
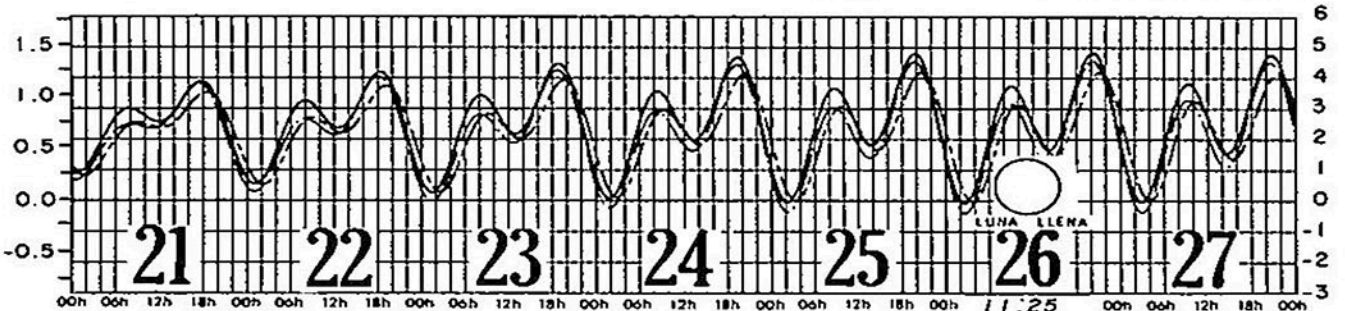
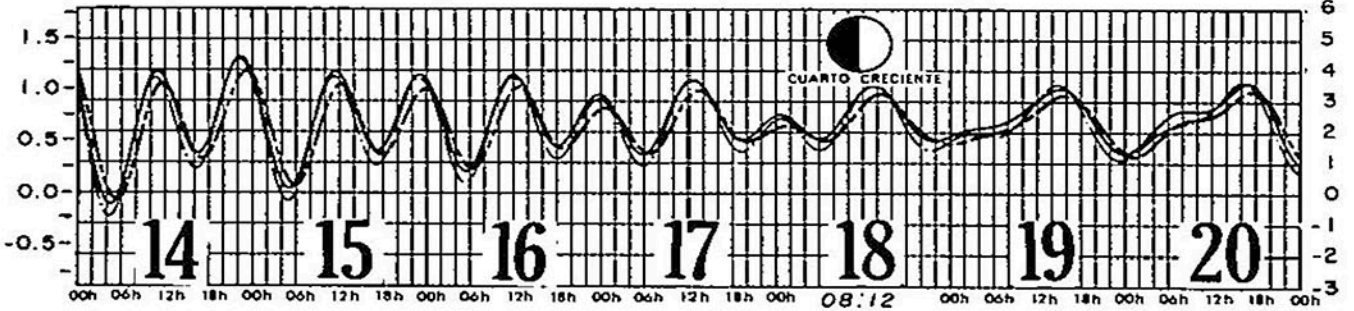
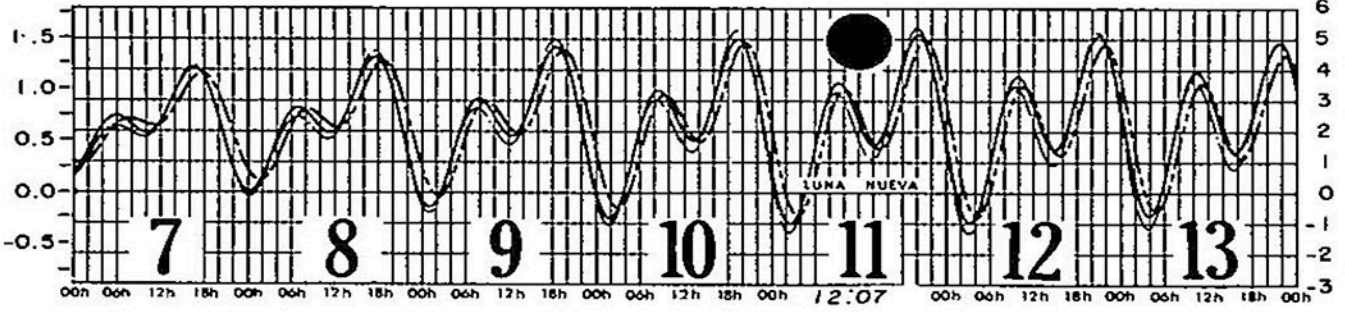
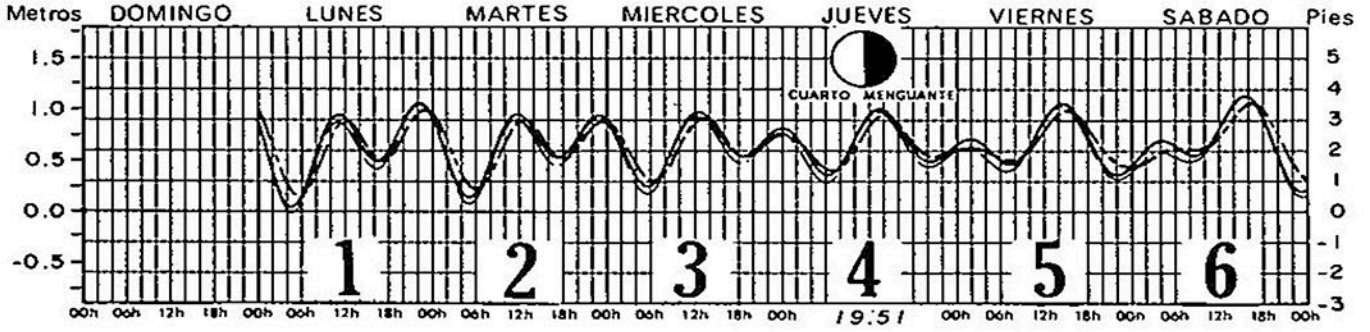




# JULIO 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

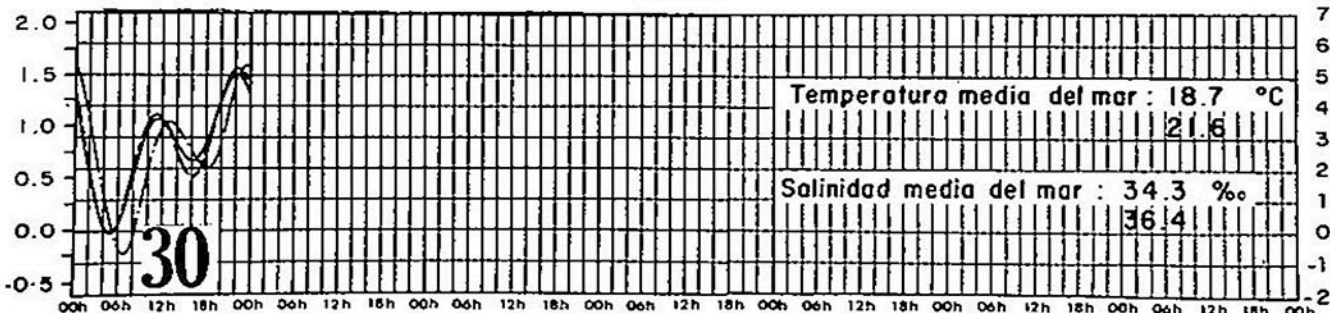
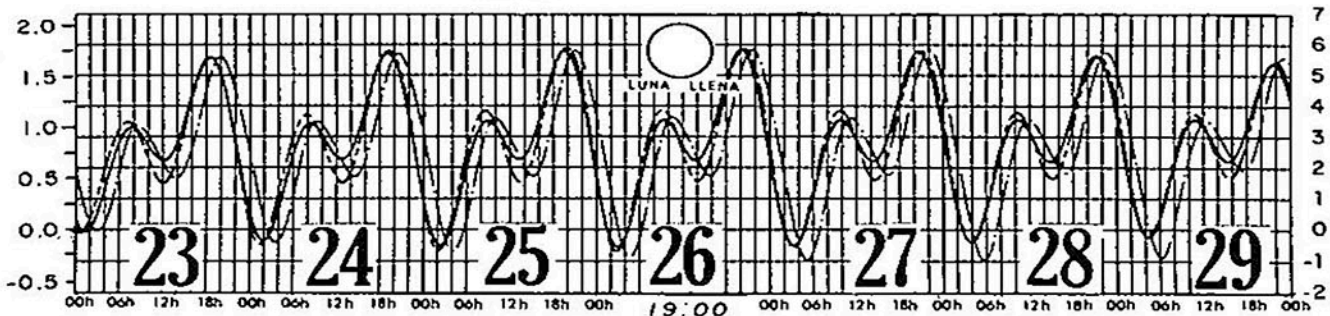
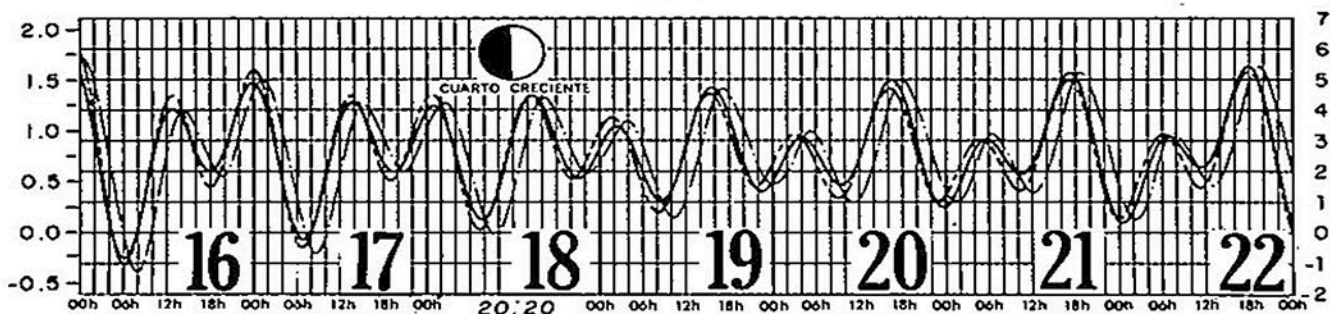
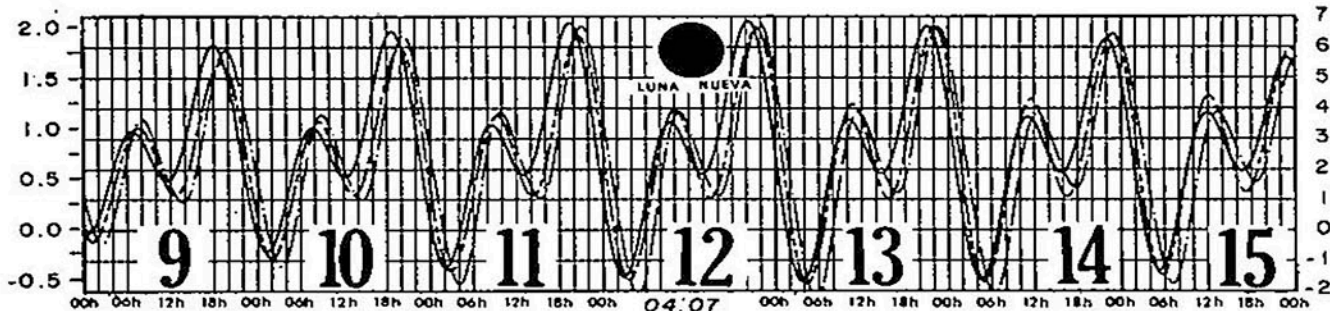
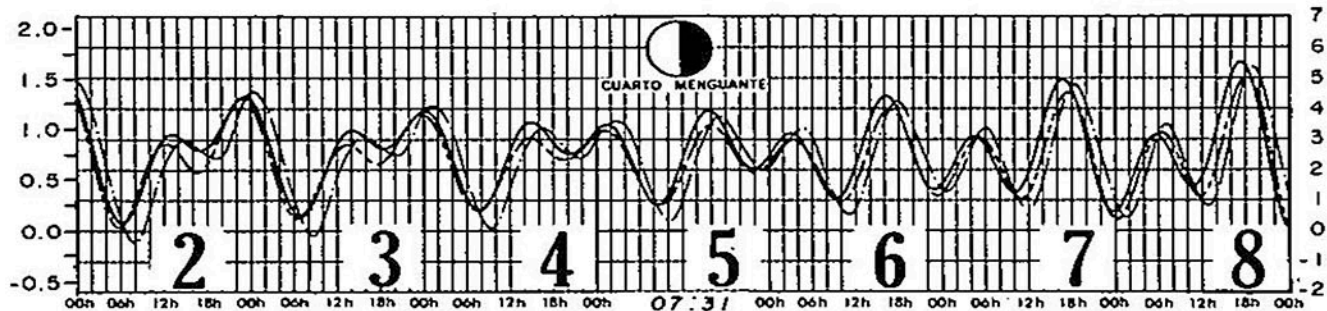
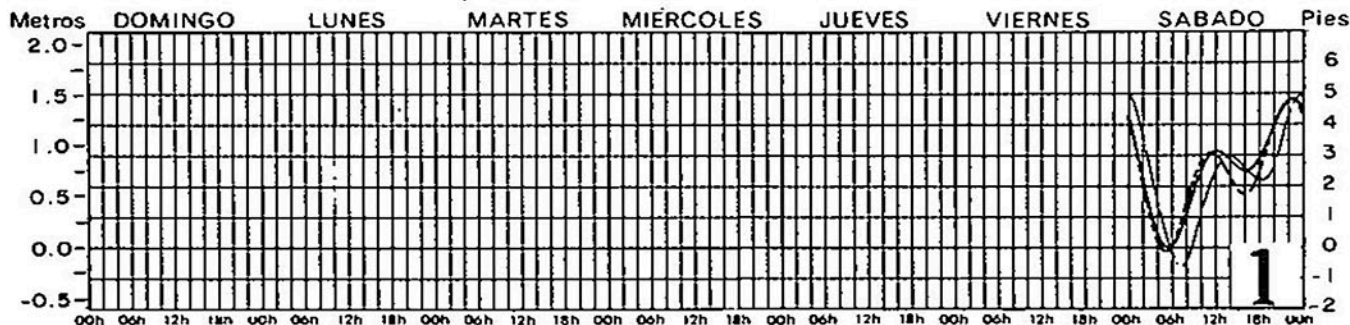


# JUNIO 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

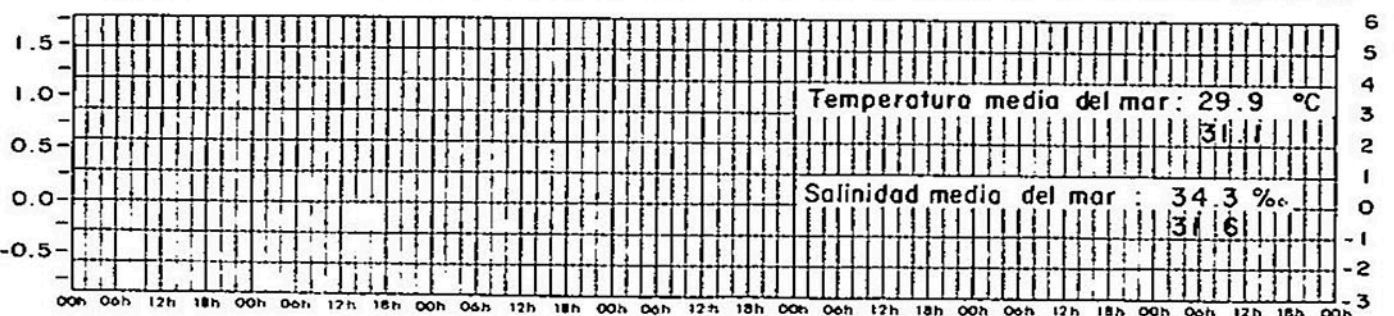
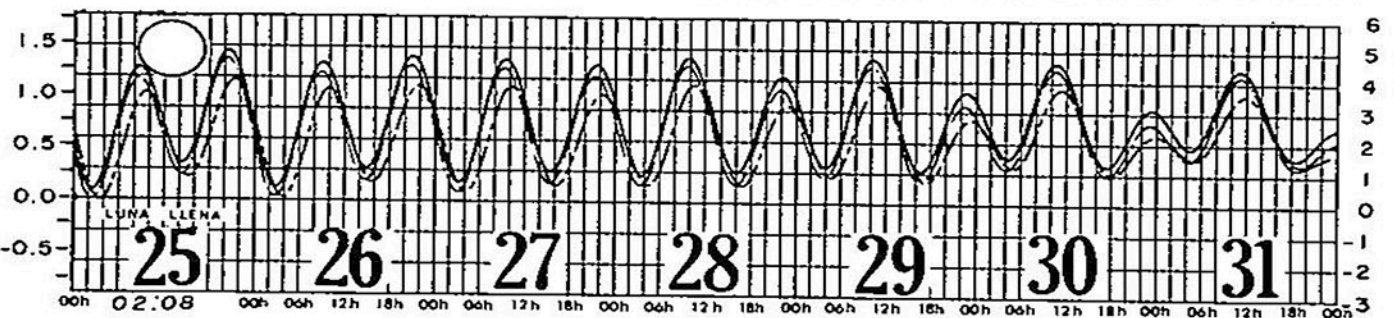
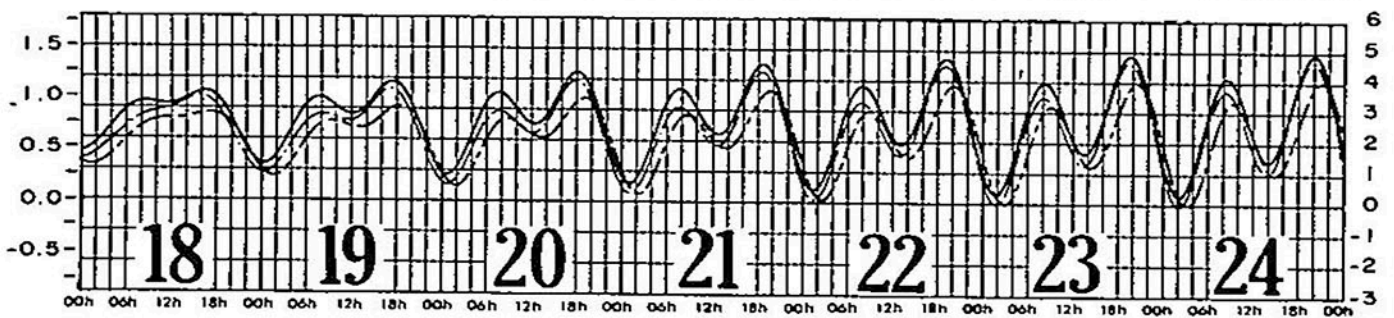
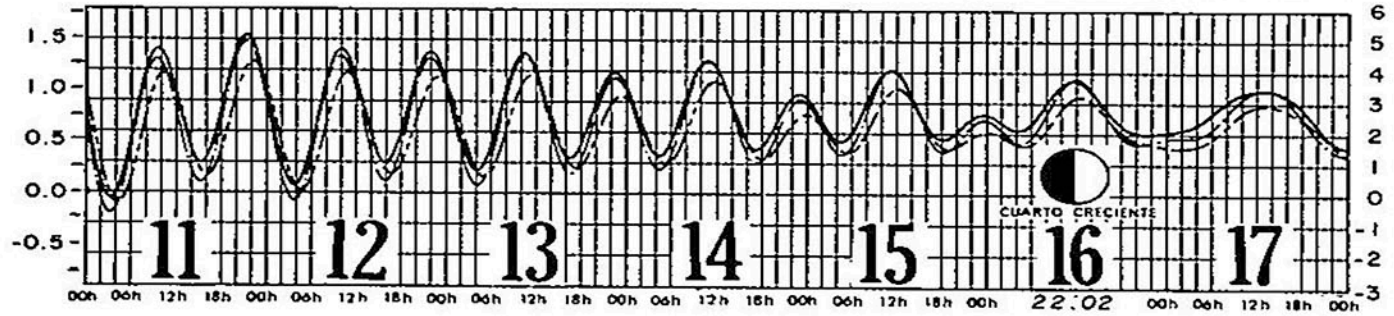
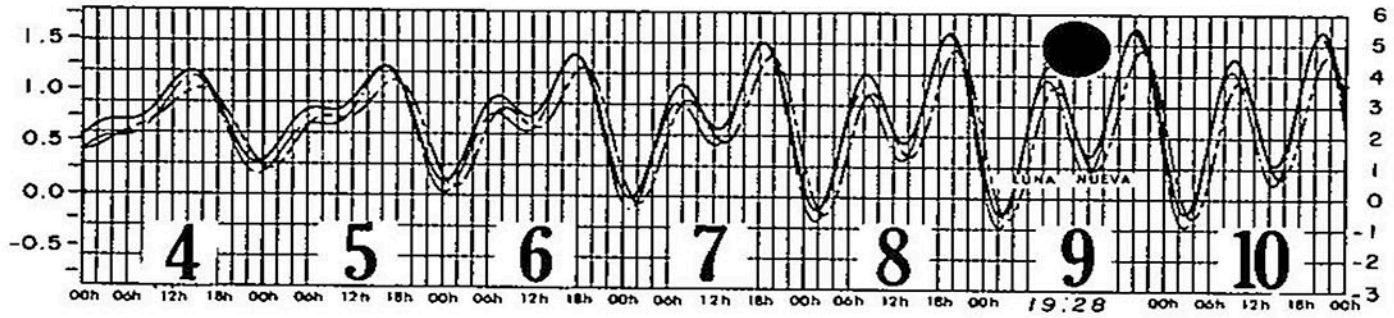
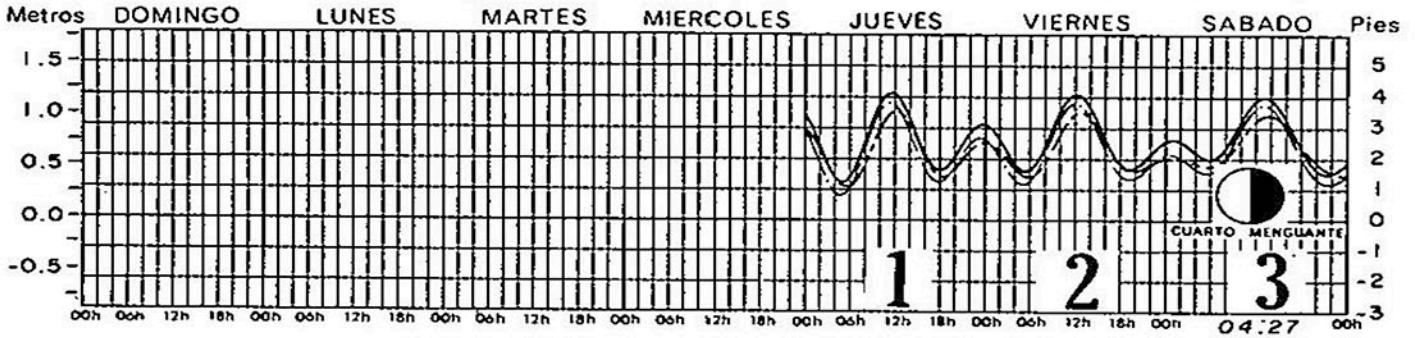




# AGOSTO 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.



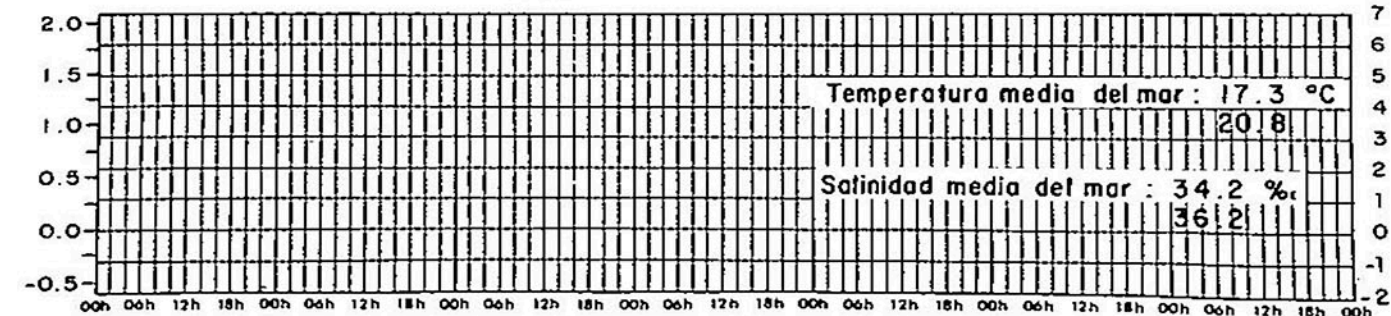
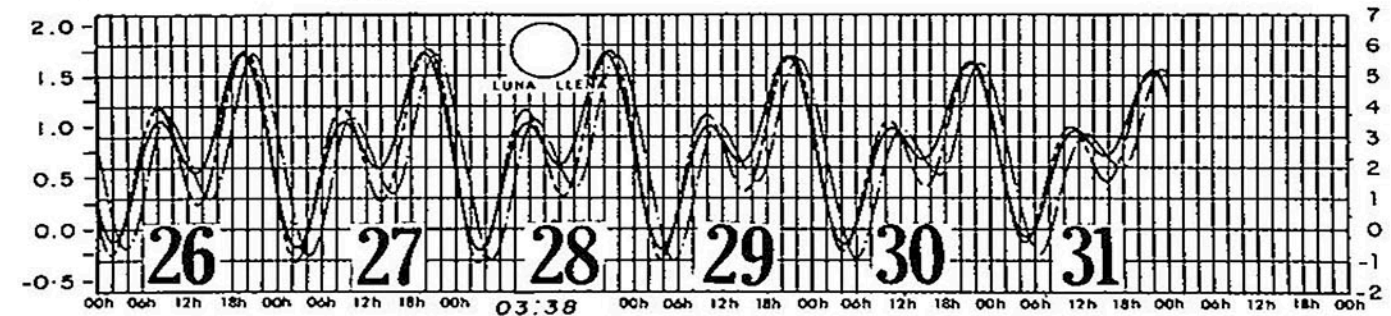
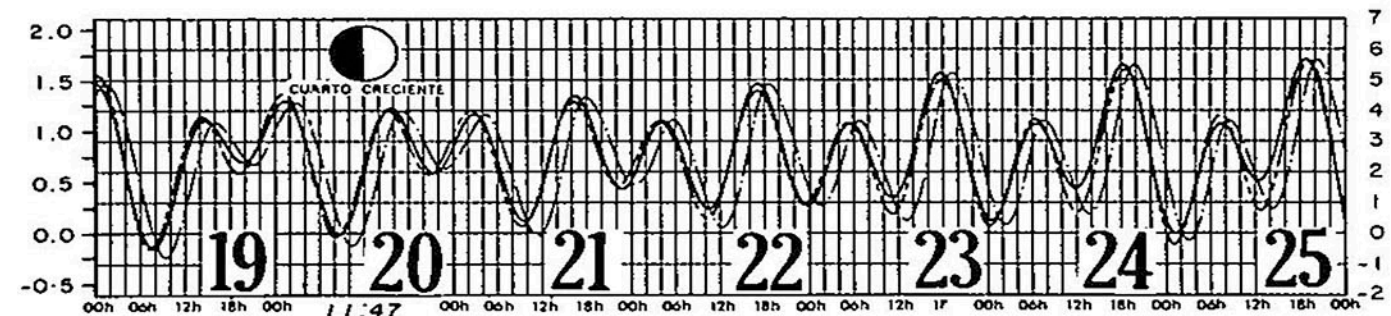
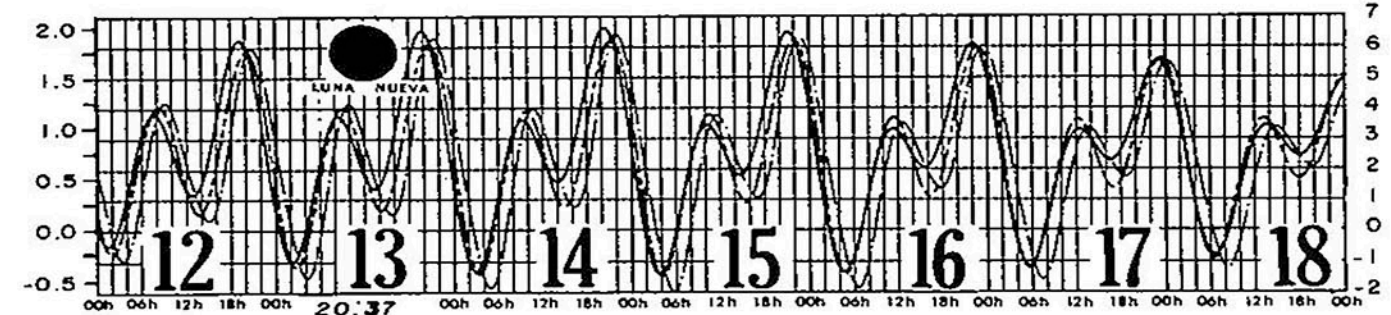
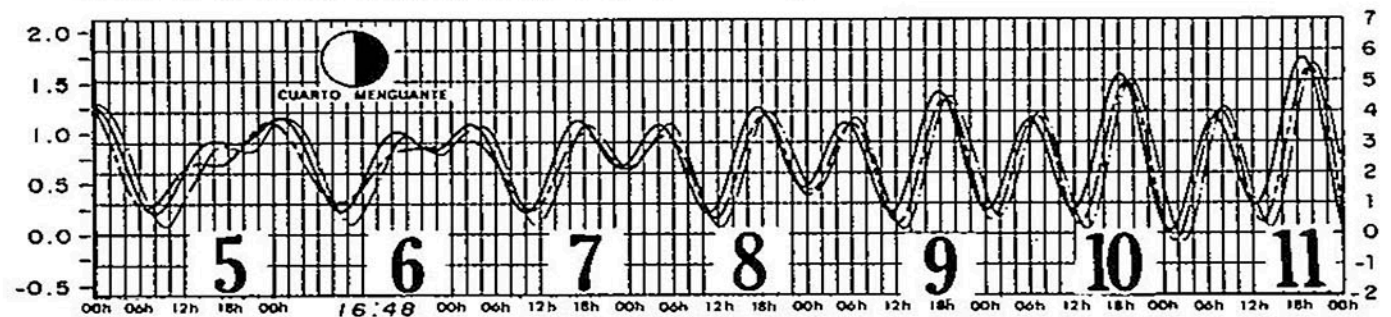
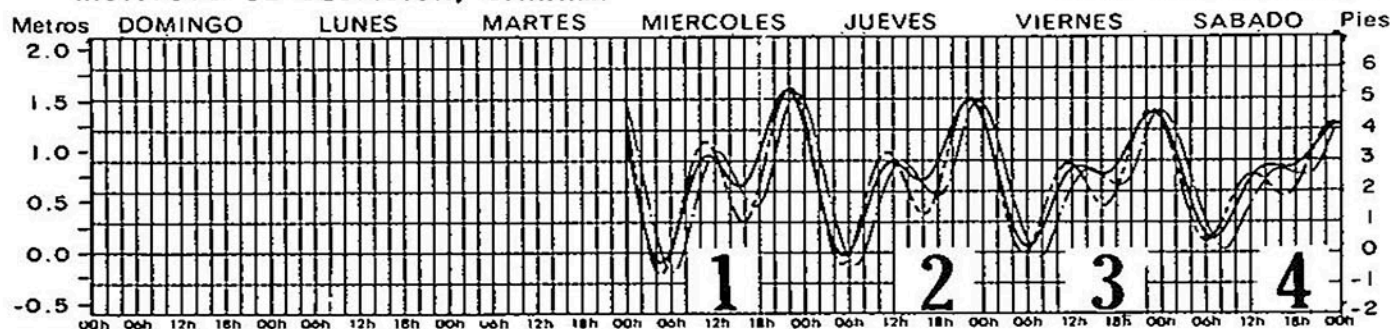


# MAYO 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN. CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



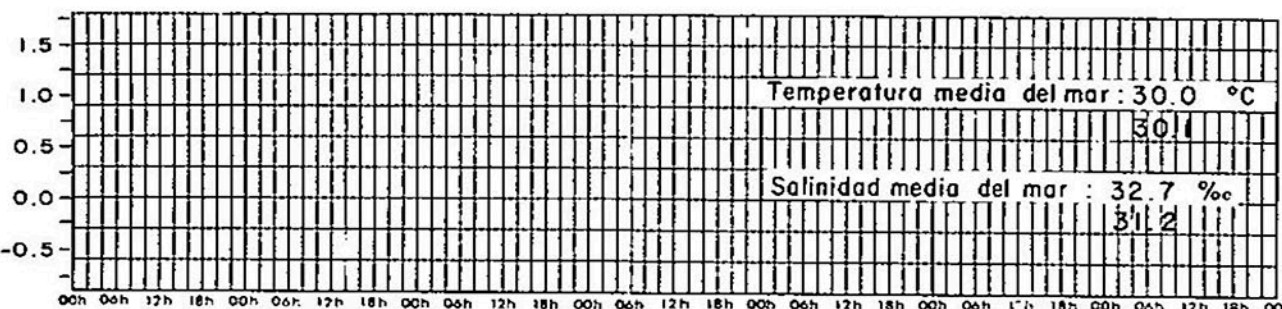
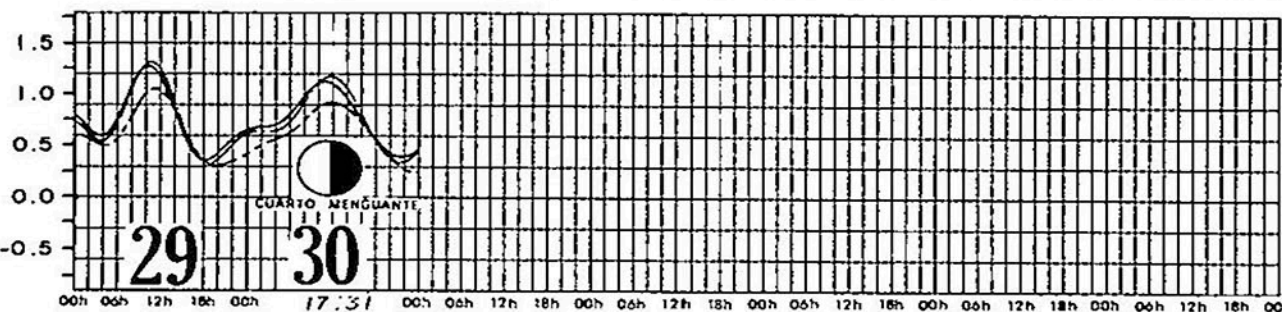
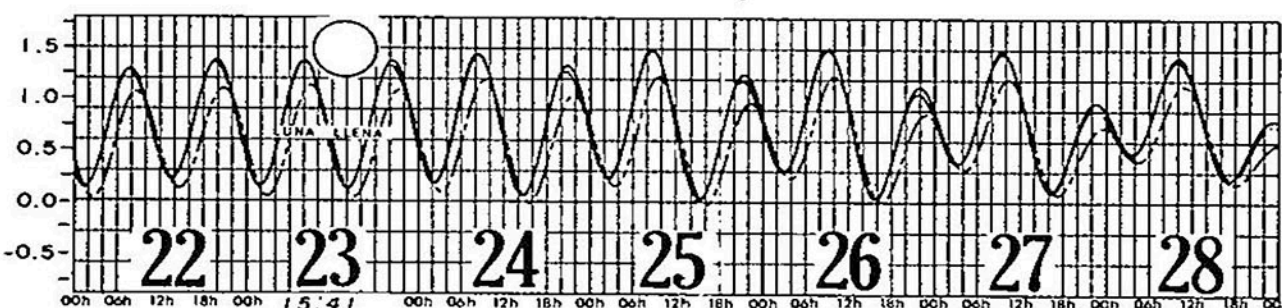
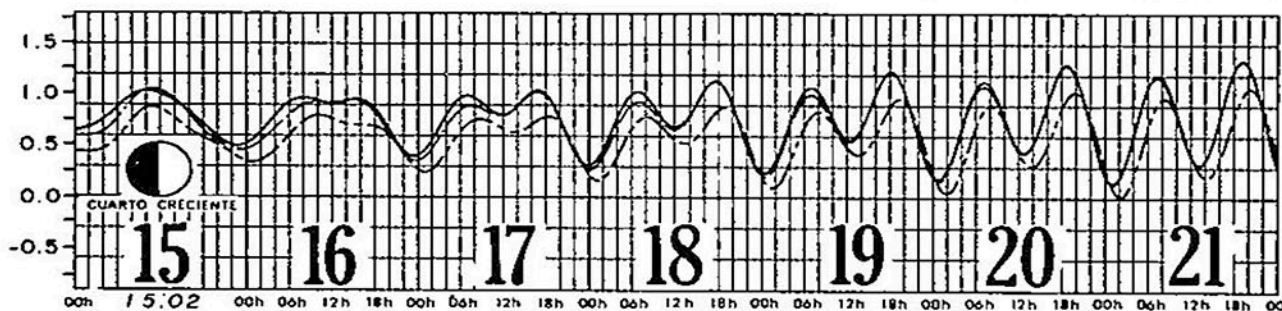
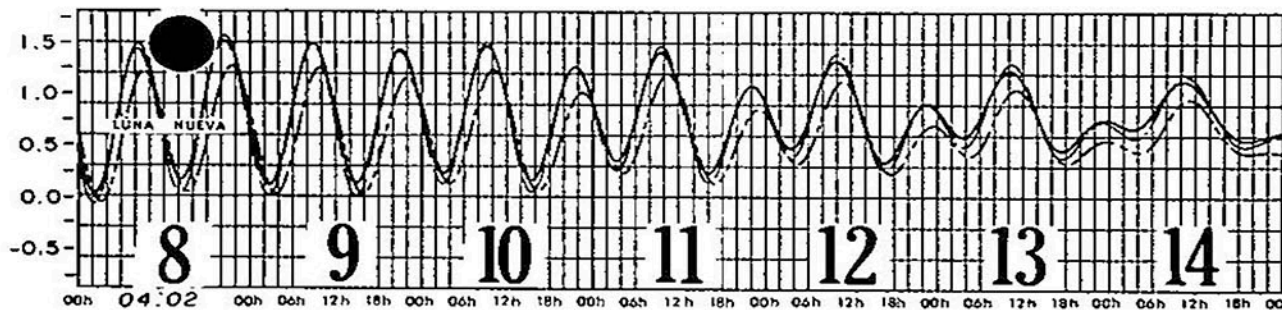
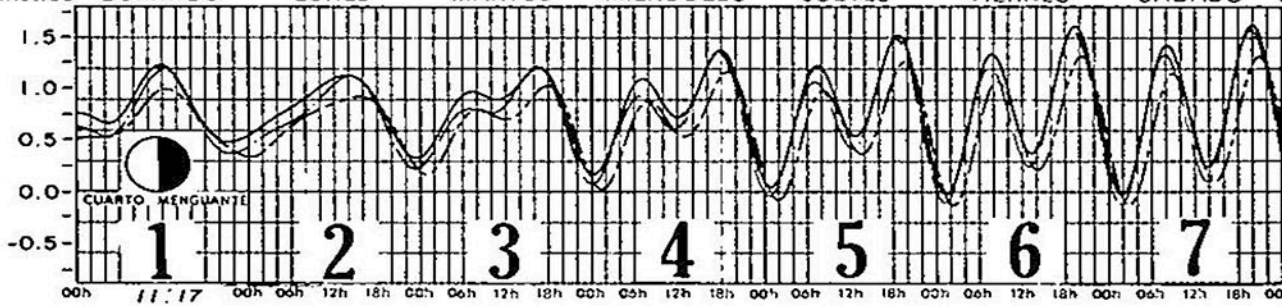
# SEPTIEMBRE 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.



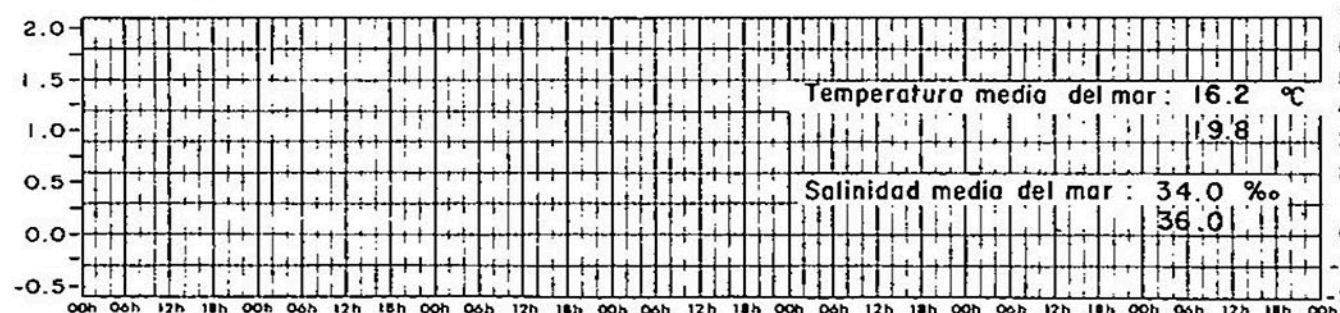
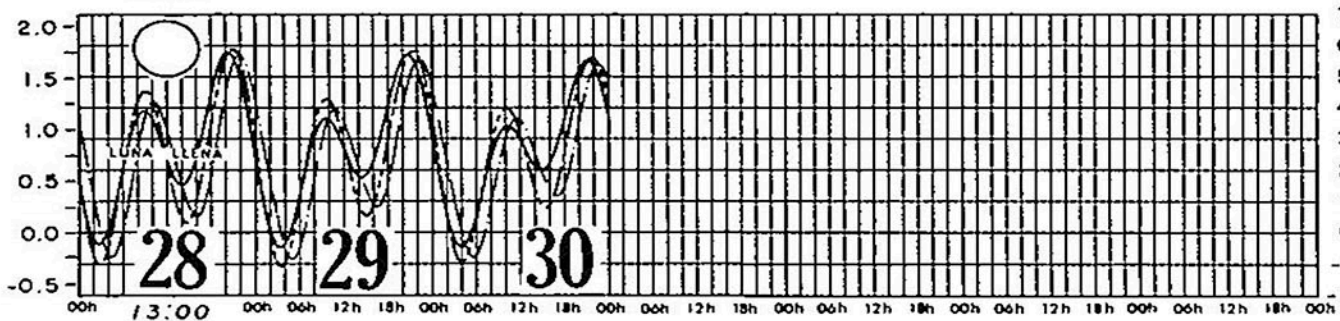
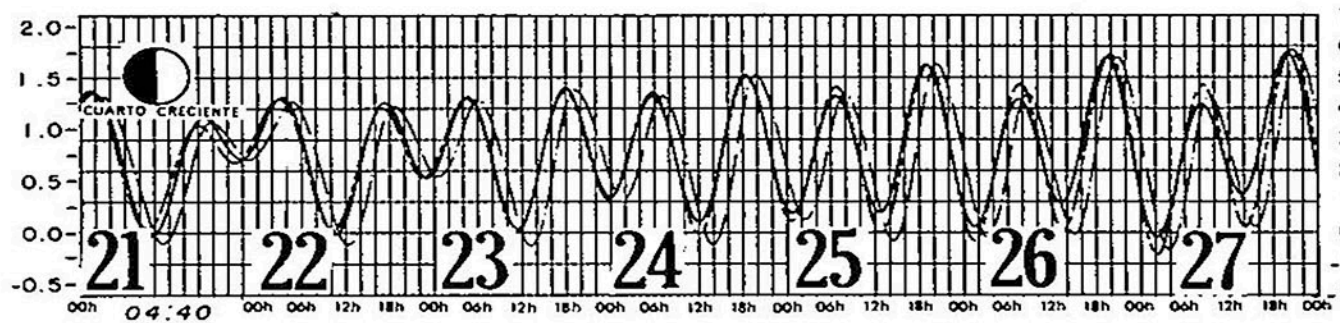
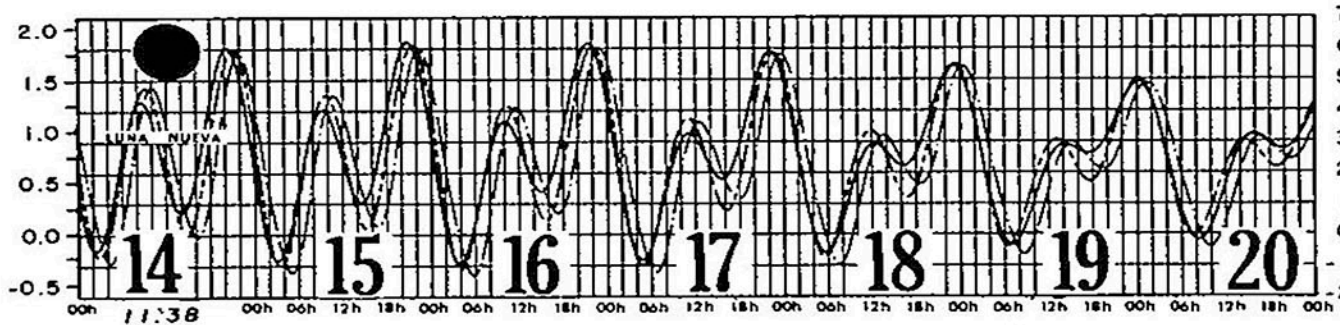
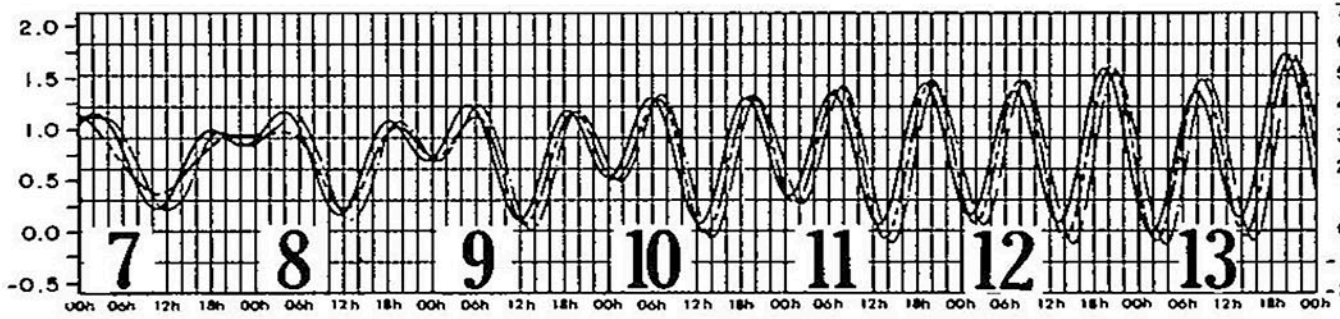
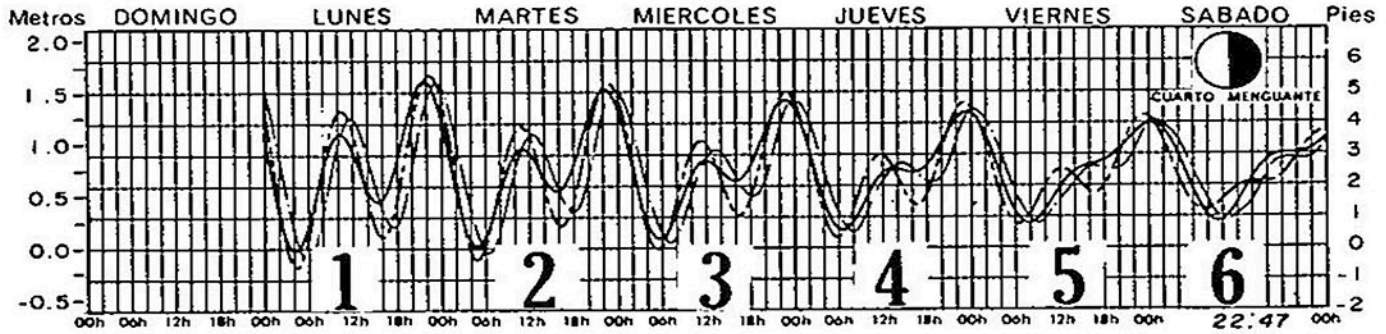


# ABRIL 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN. CARLOS, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.L.

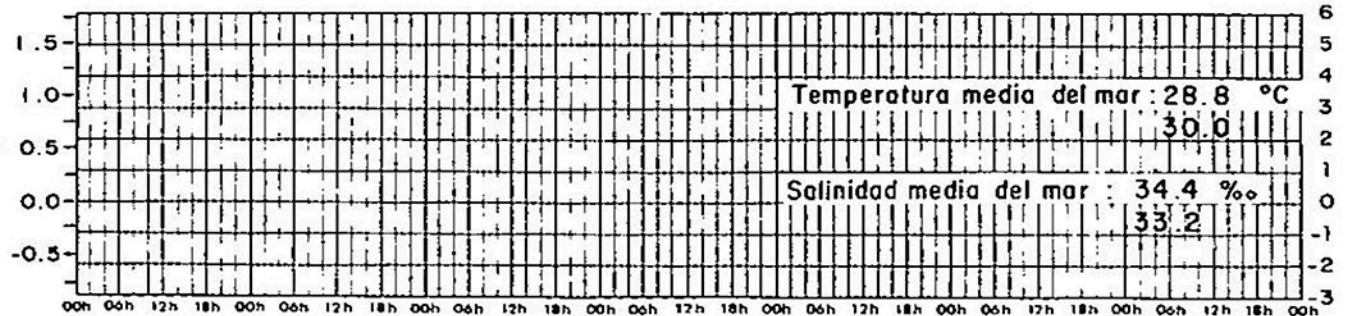
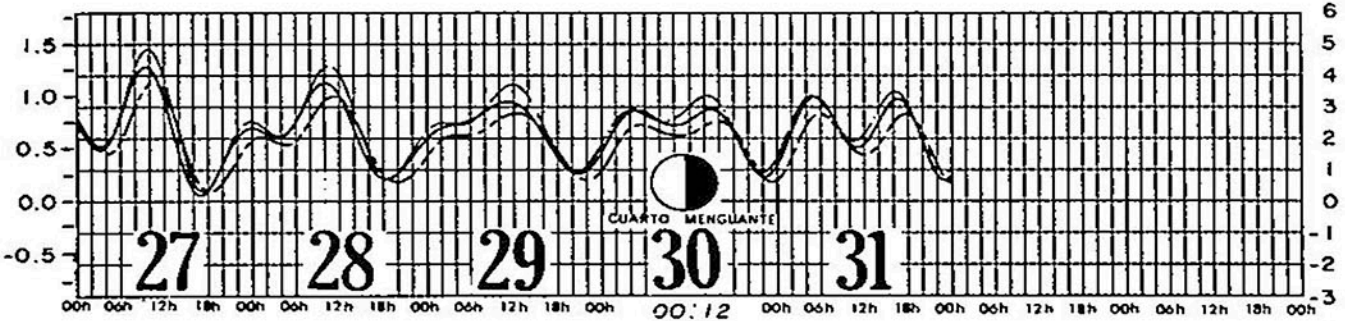
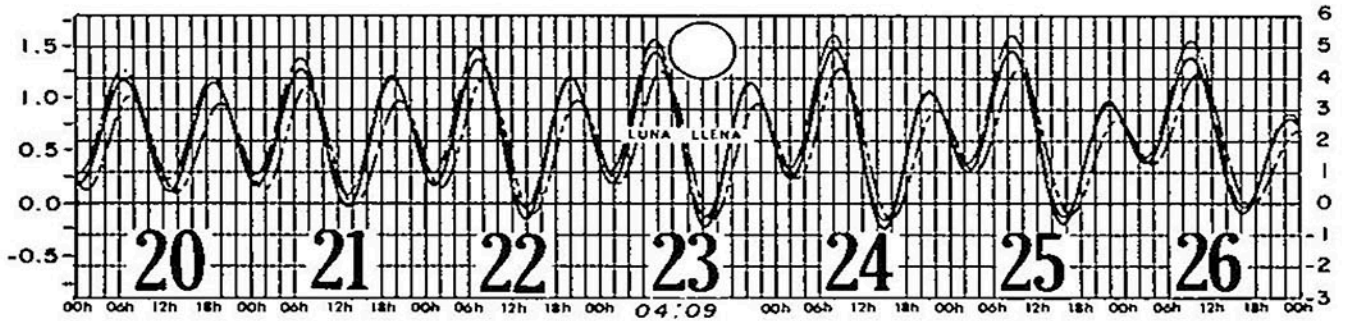
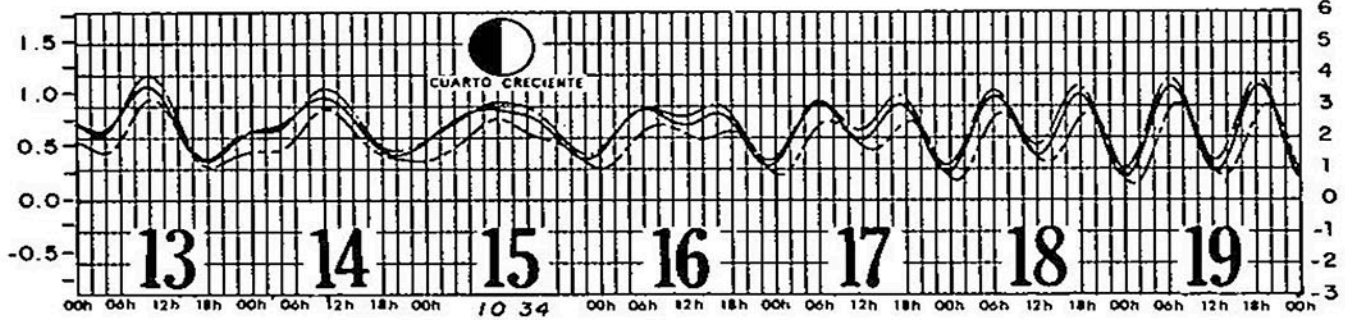
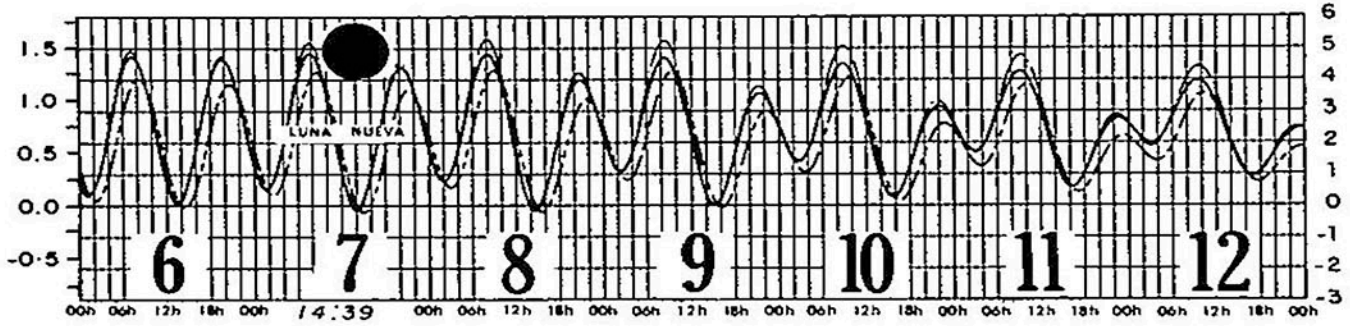
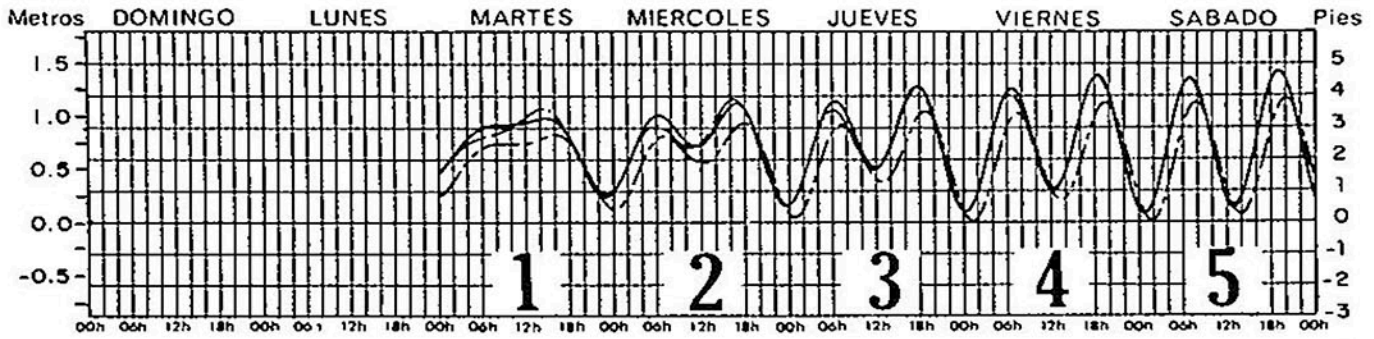


# OCTUBRE 1991

CABO SN. LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

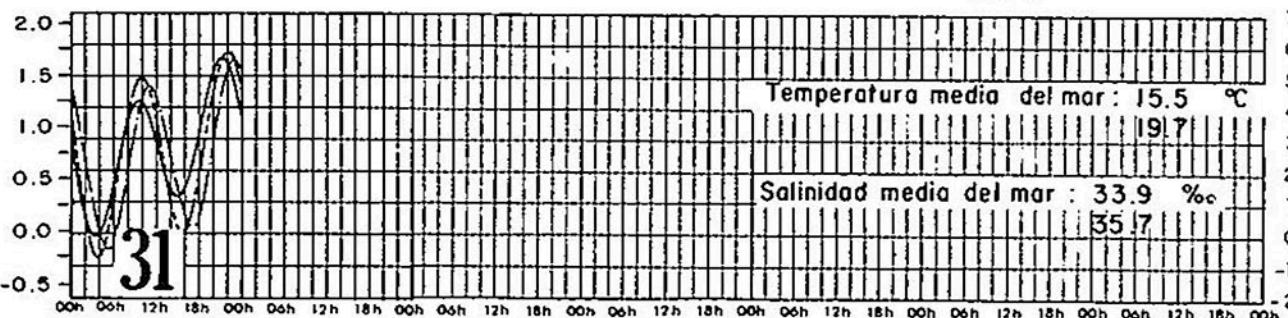
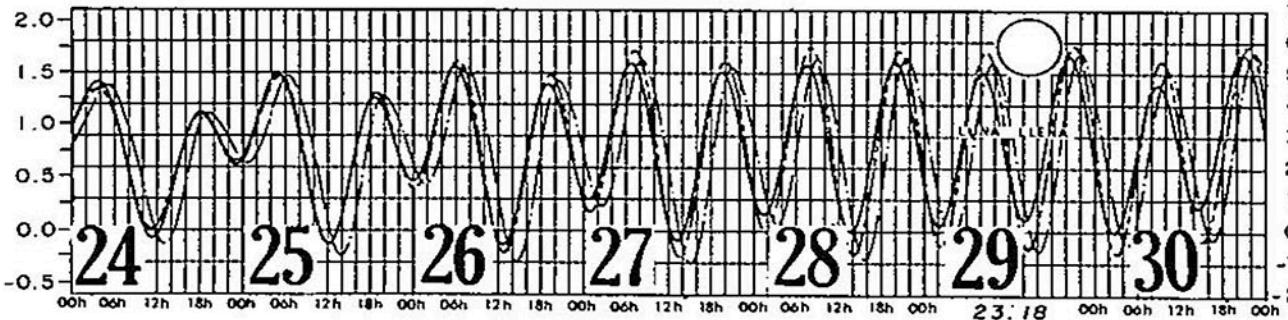
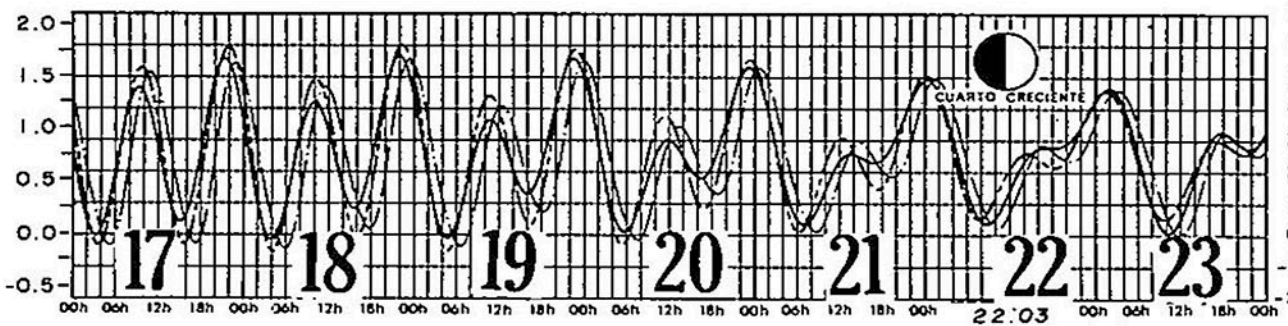
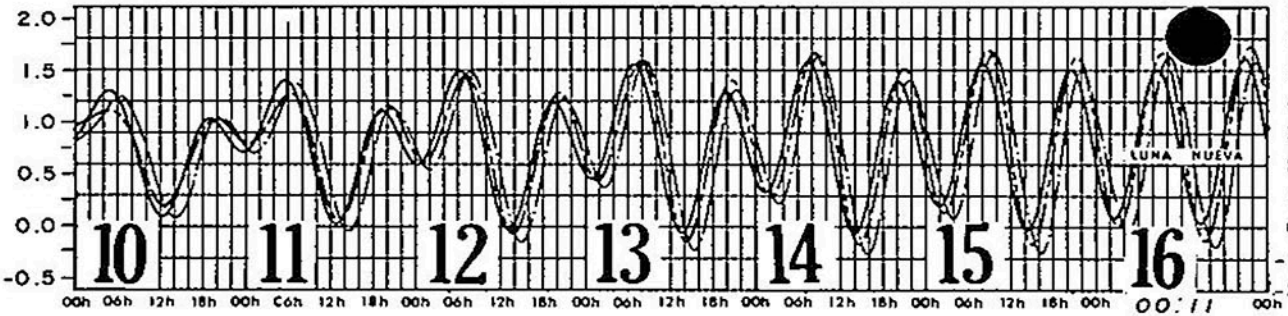
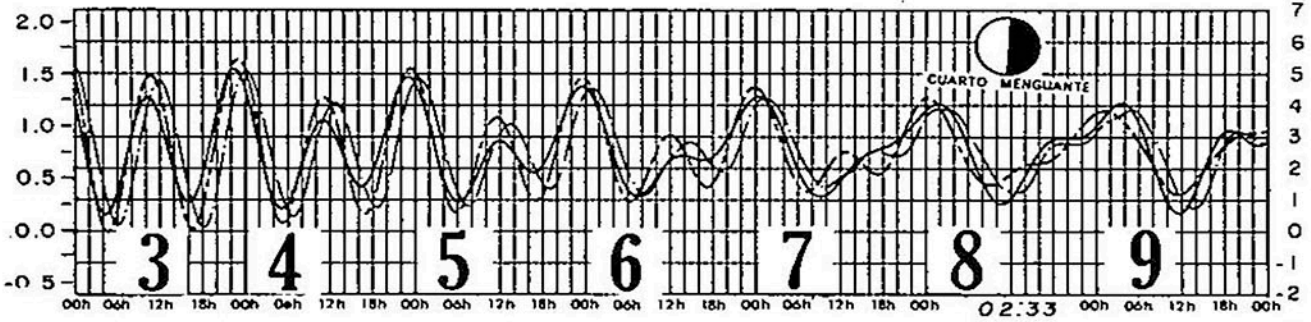
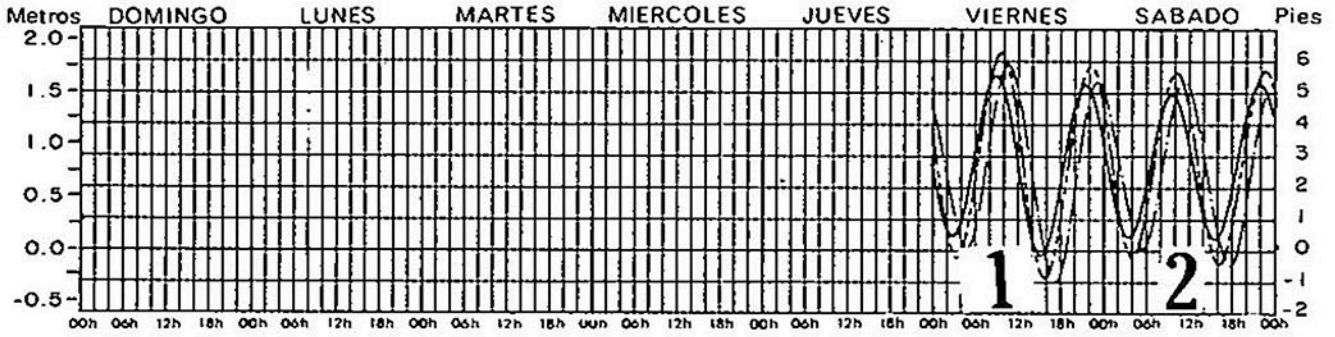




# MARZO 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN. CARLOS, B.C.S.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

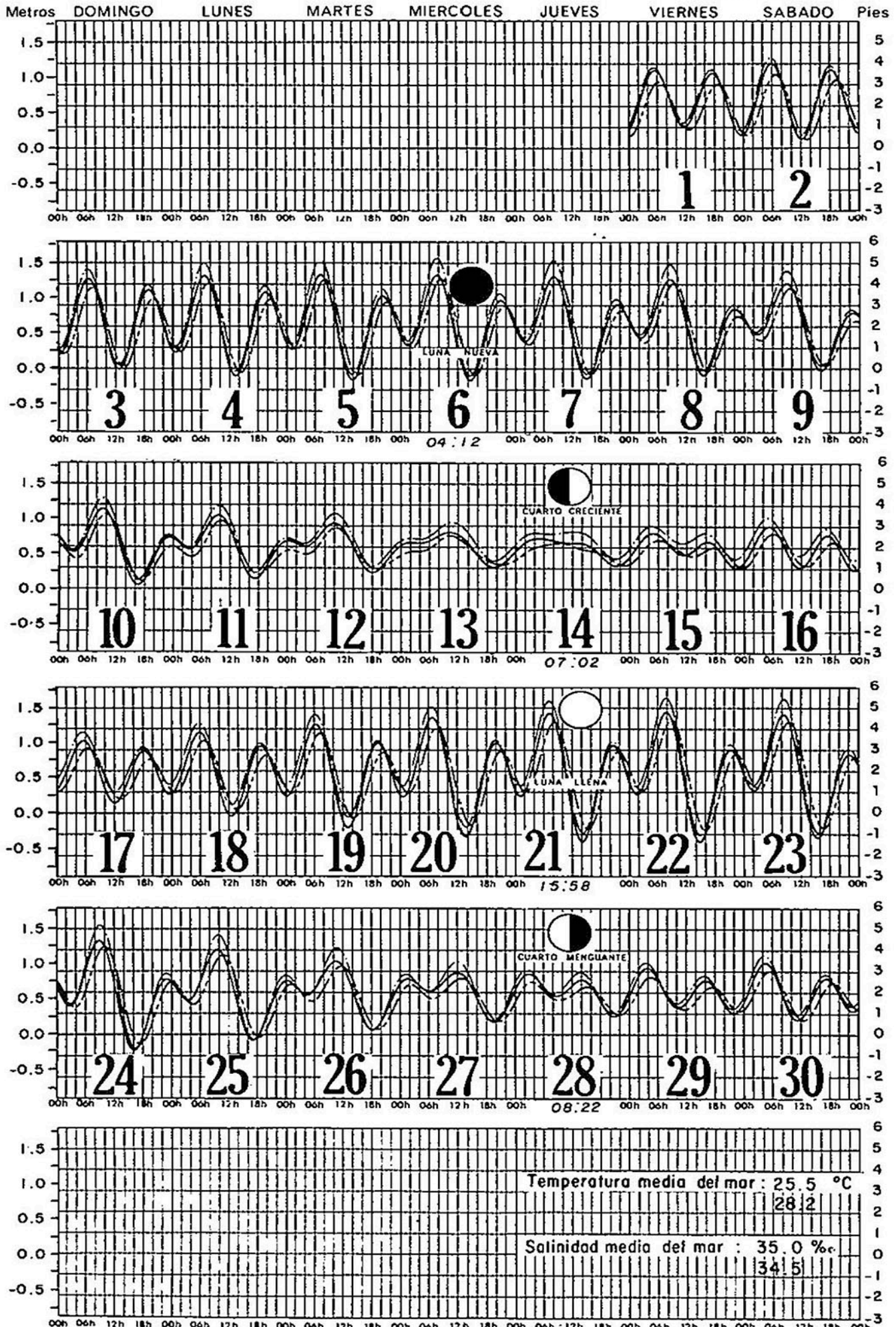


# NOVIEMBRE 1991

CABO SAN LUCAS, B.C.S.  
MAZATLAN, SIN.  
PTO. VALLARTA, JAL.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W  
HORA DEL MERIDIANO 90° W

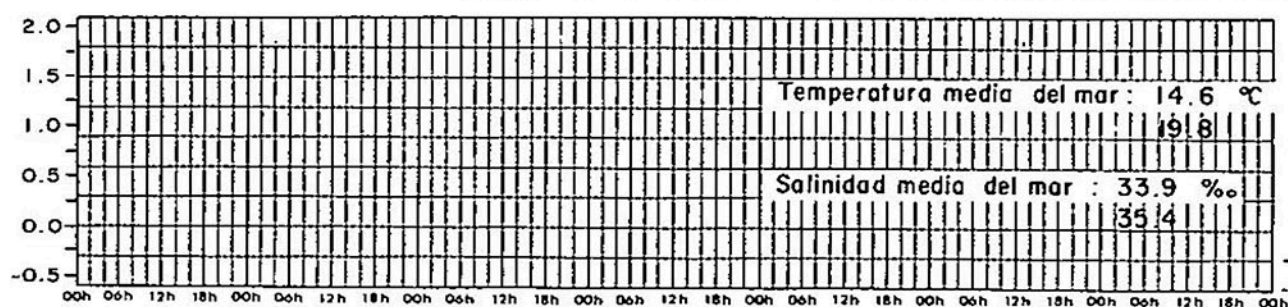
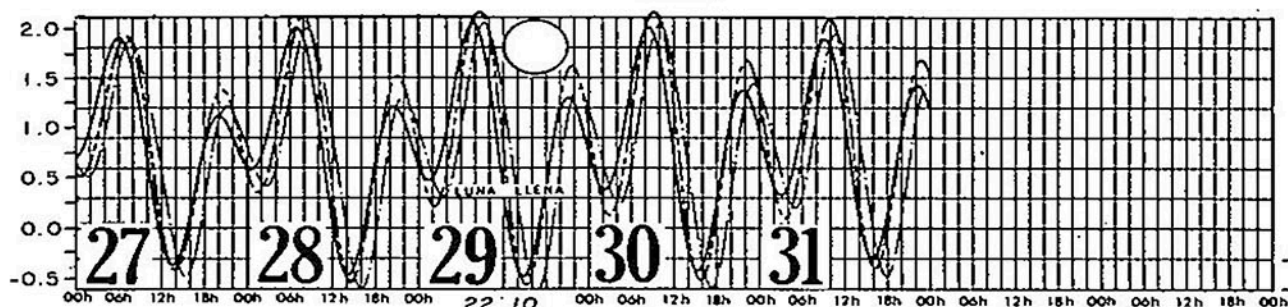
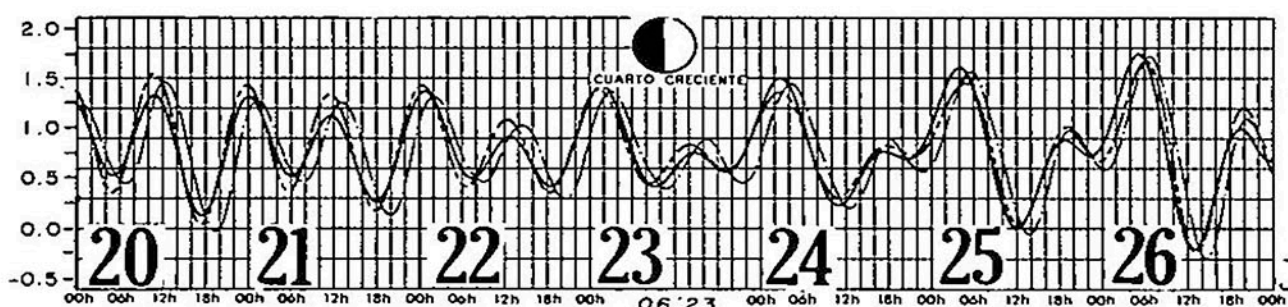
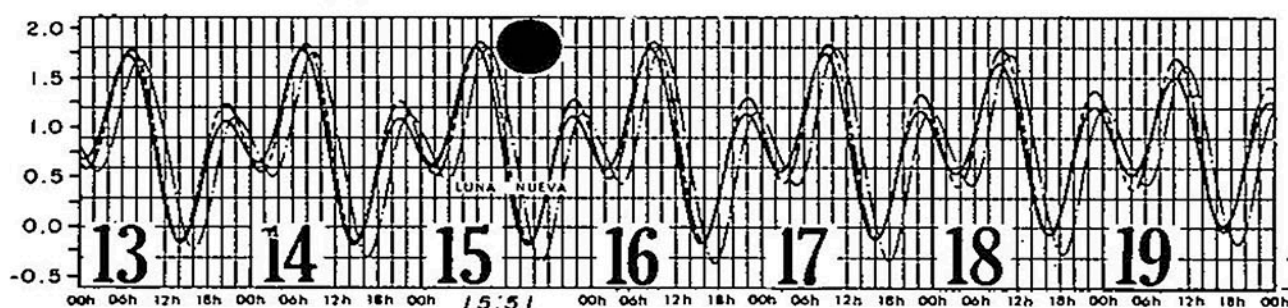
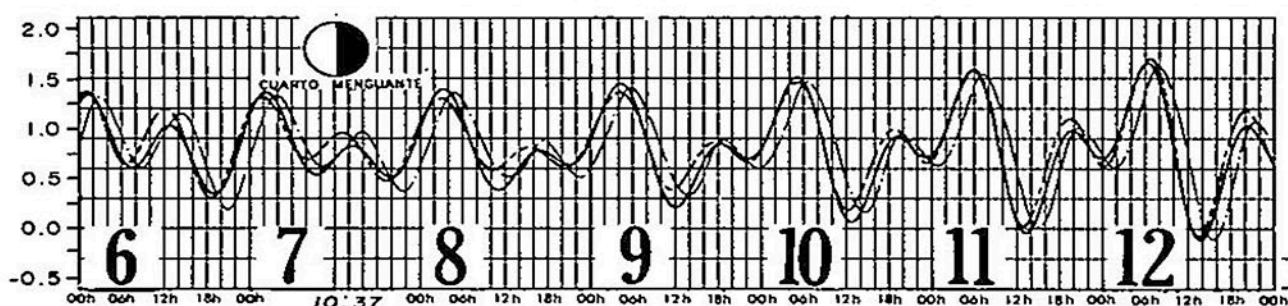
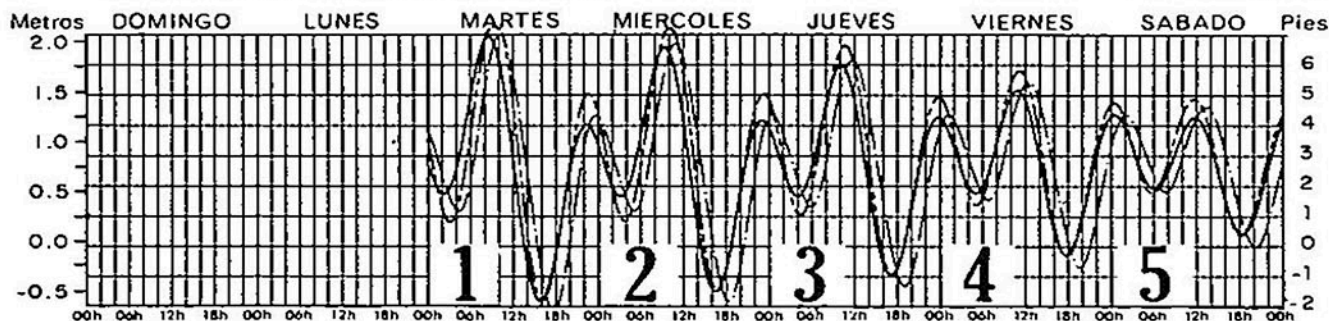
PLANO DE REFERENCIA: N.B.M.I.



# ENERO 1991

ENSENADA, B.C.  
GRO. NEGRO, B.C.S.  
SAN CARLOS, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 120° W  
HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

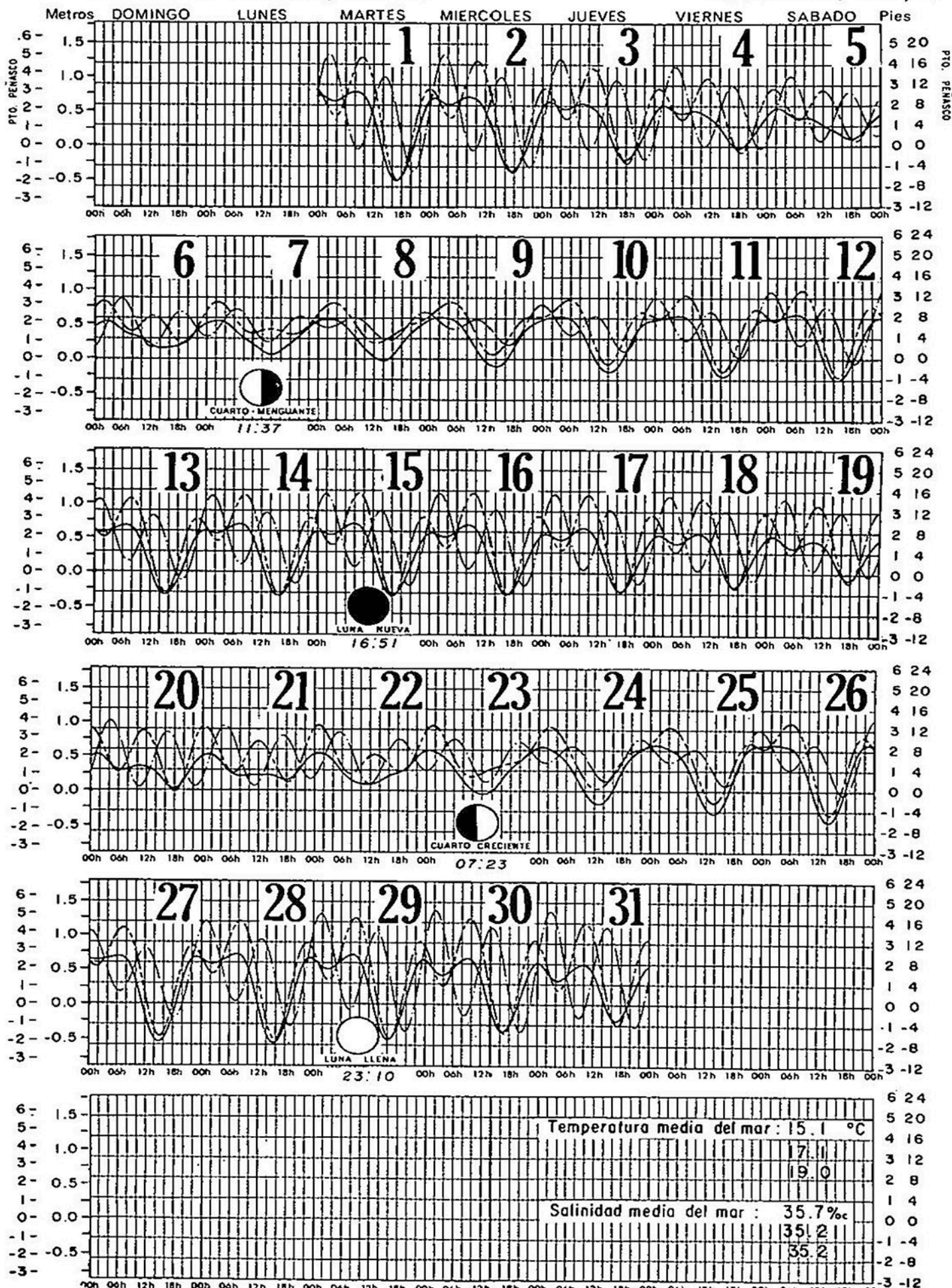




# ENERO 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M. 1.



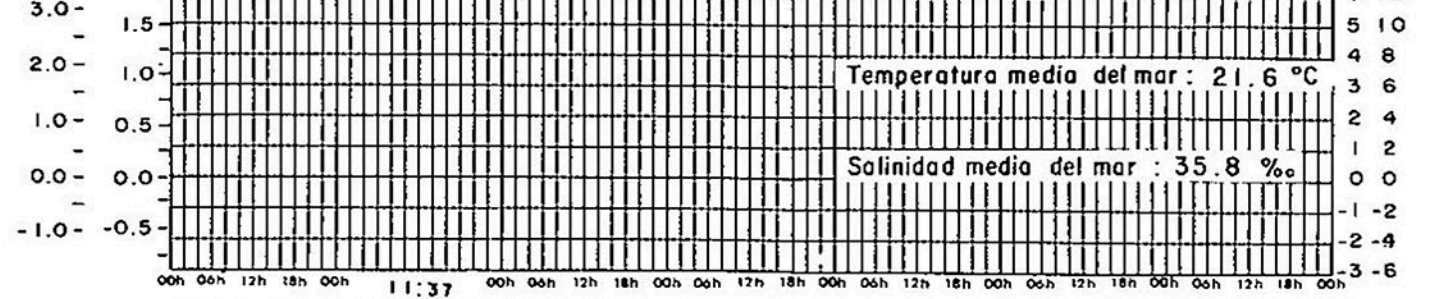
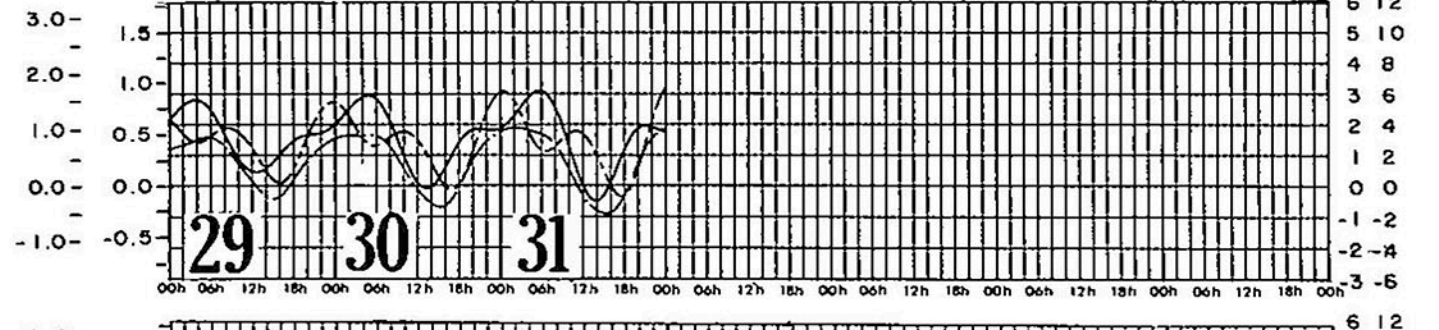
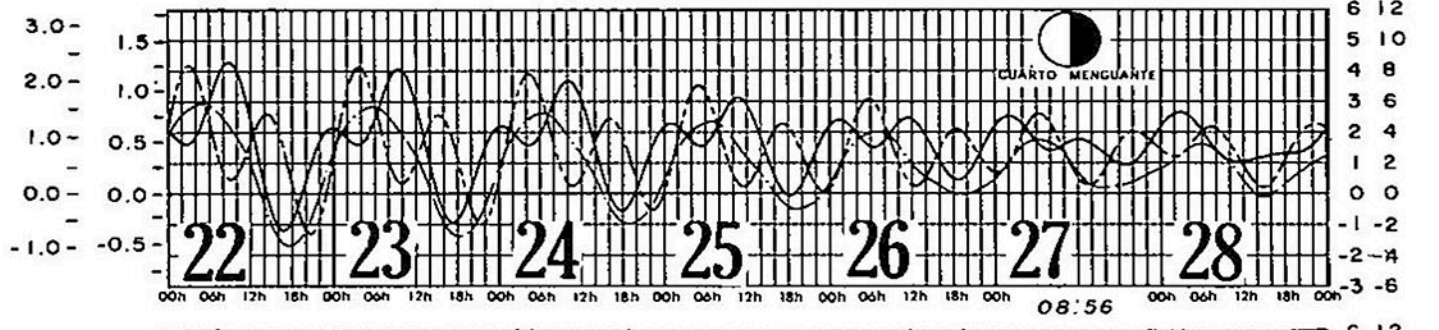
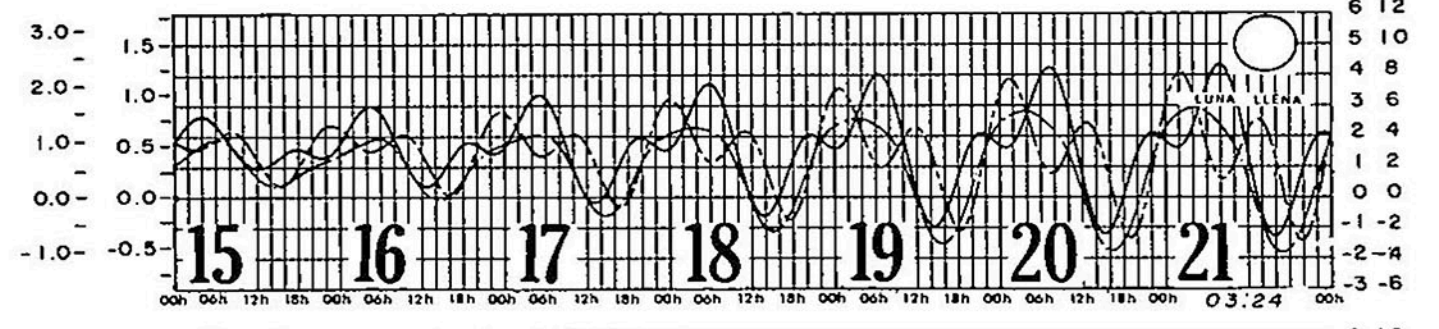
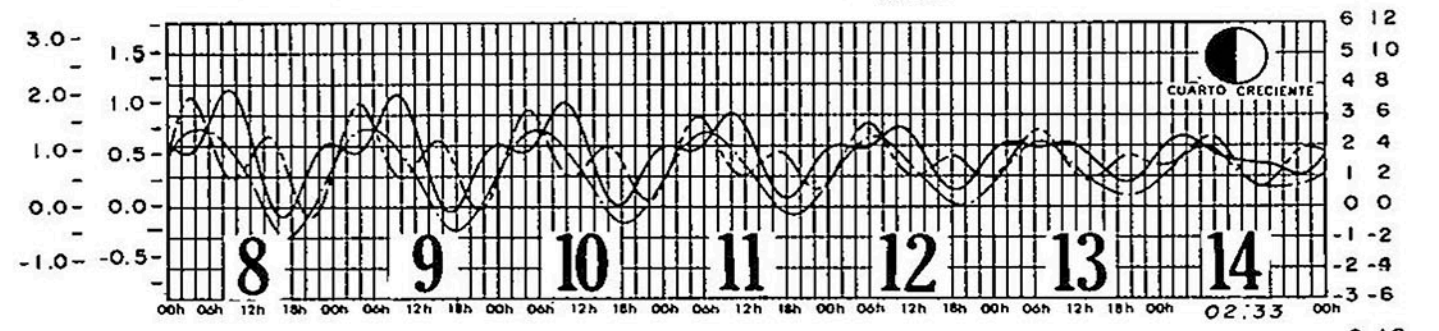
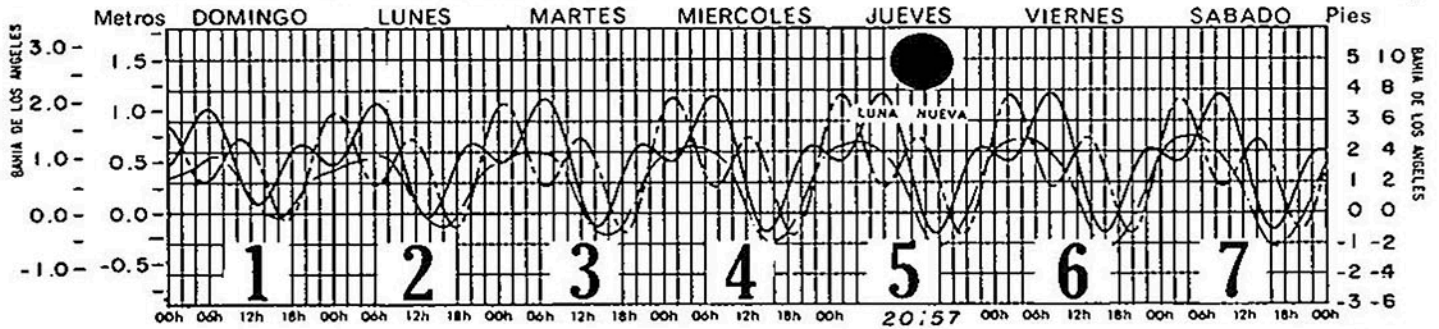
# DICIEMBRE 1991

B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



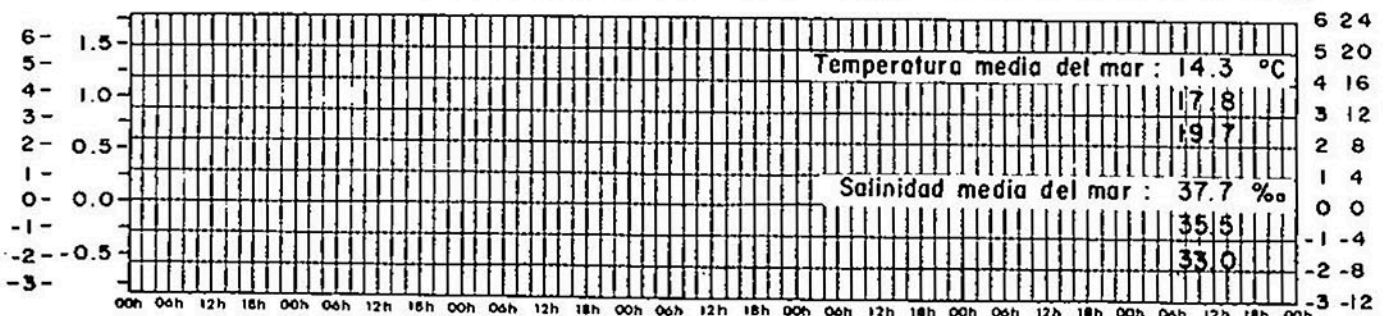
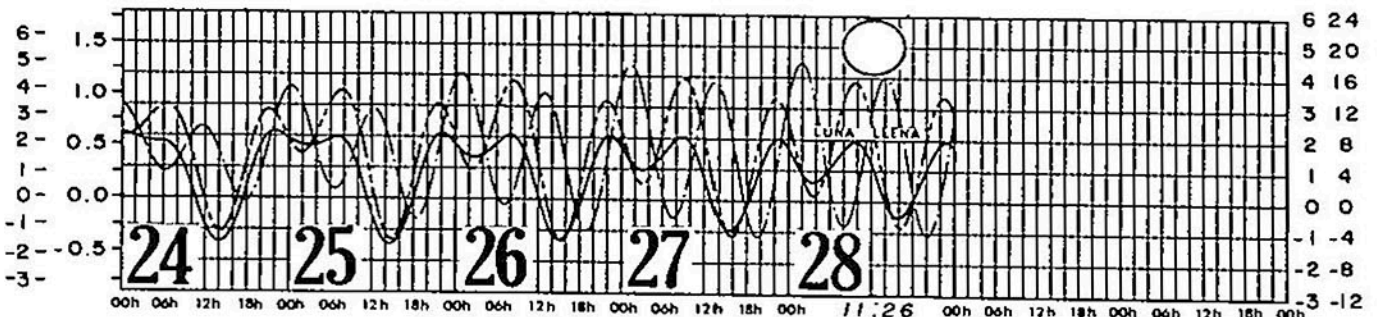
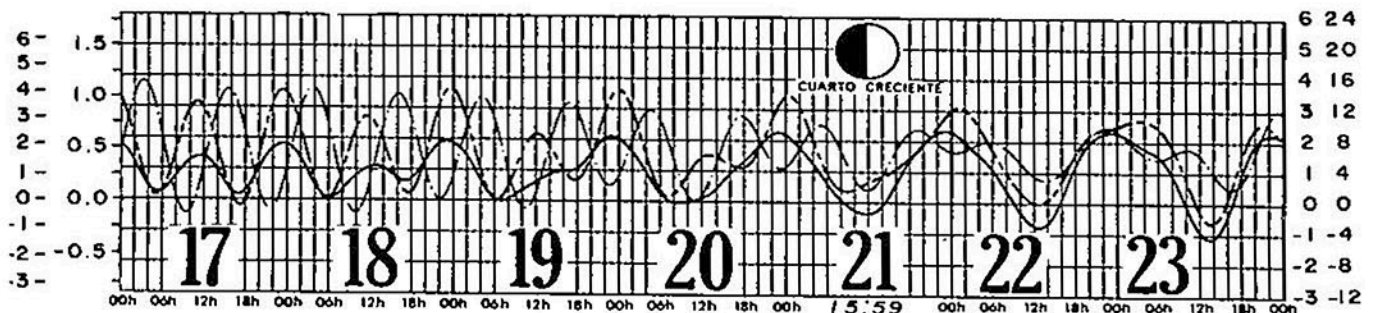
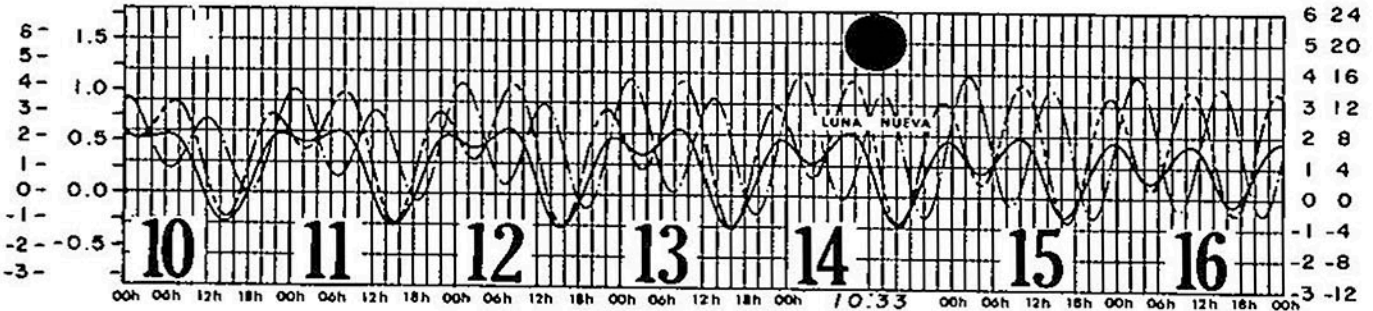
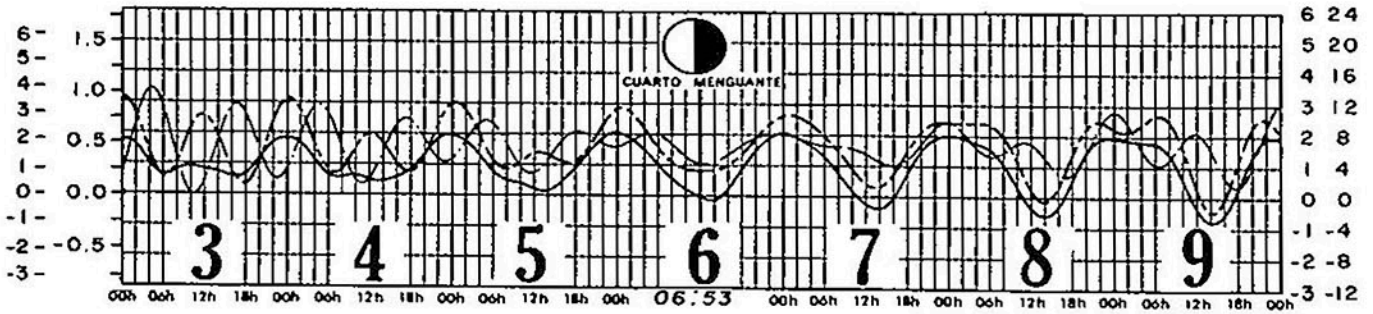
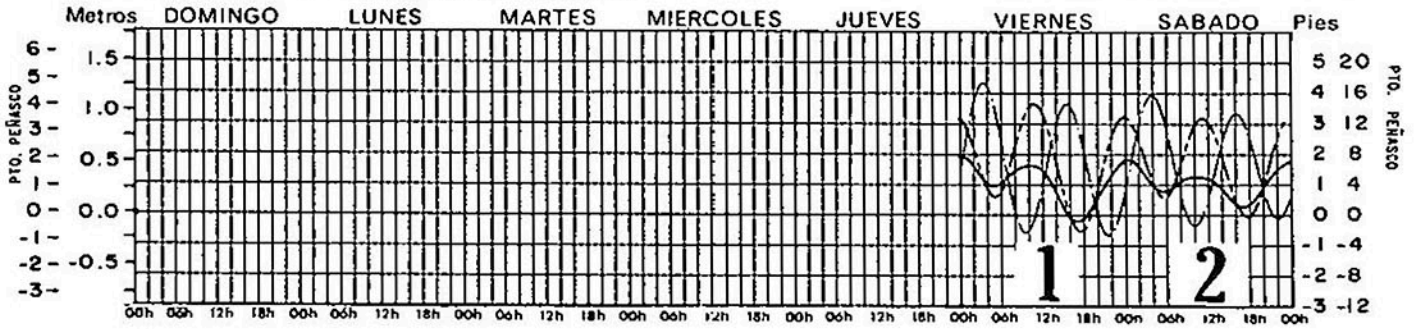


# FEBRERO 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M.I.



# NOVIEMBRE 1991

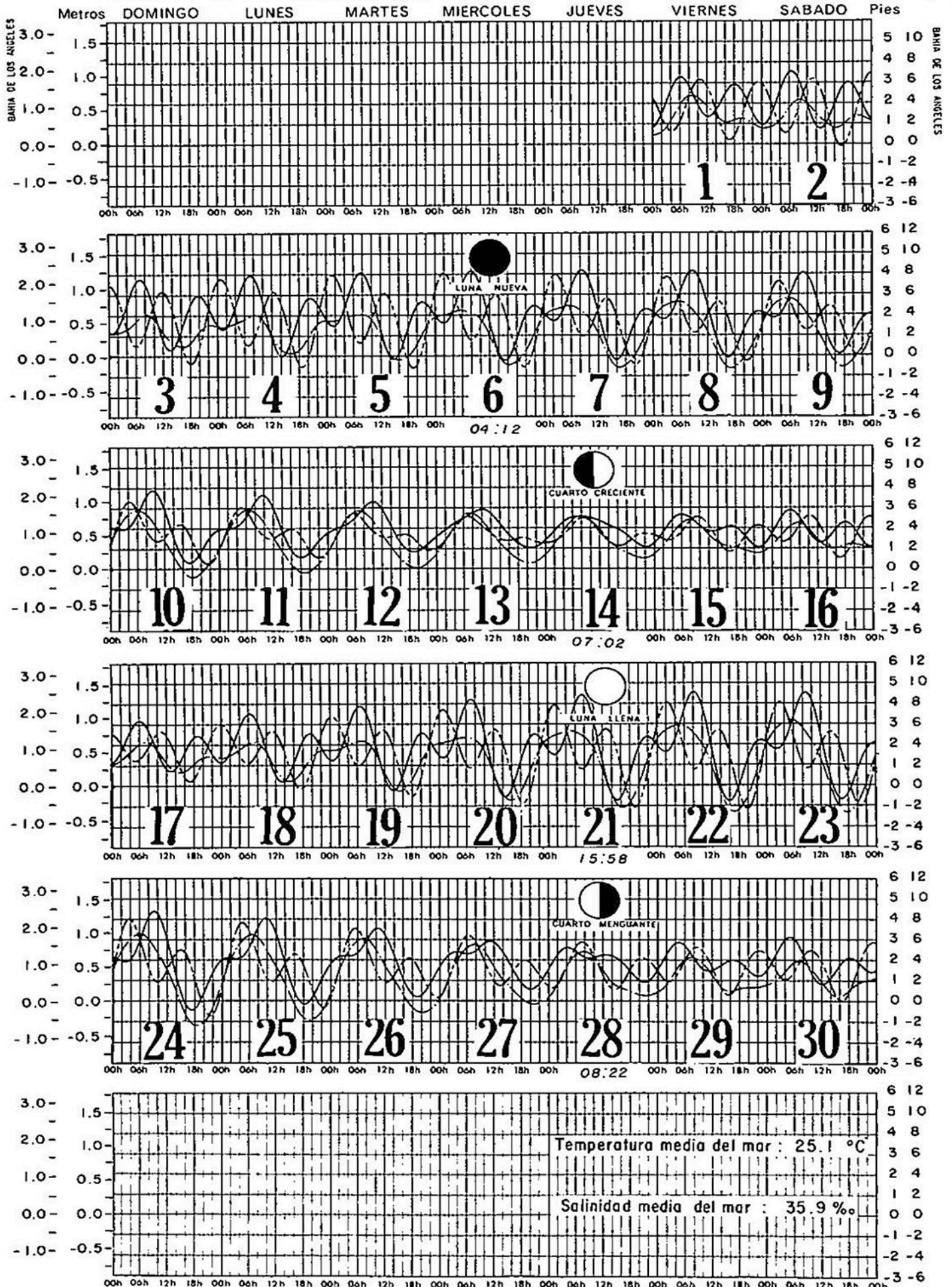
B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

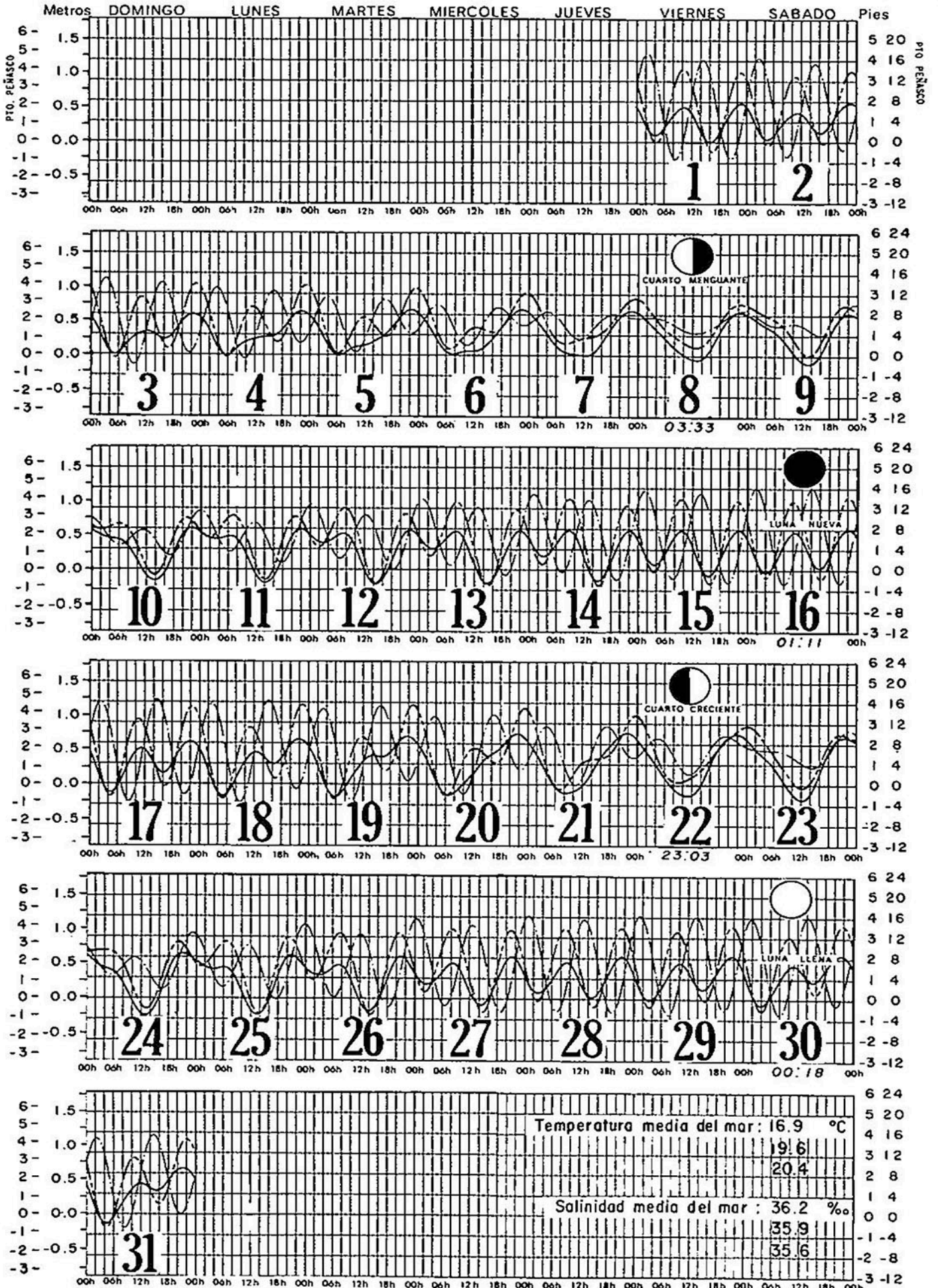




# MARZO 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M.I.



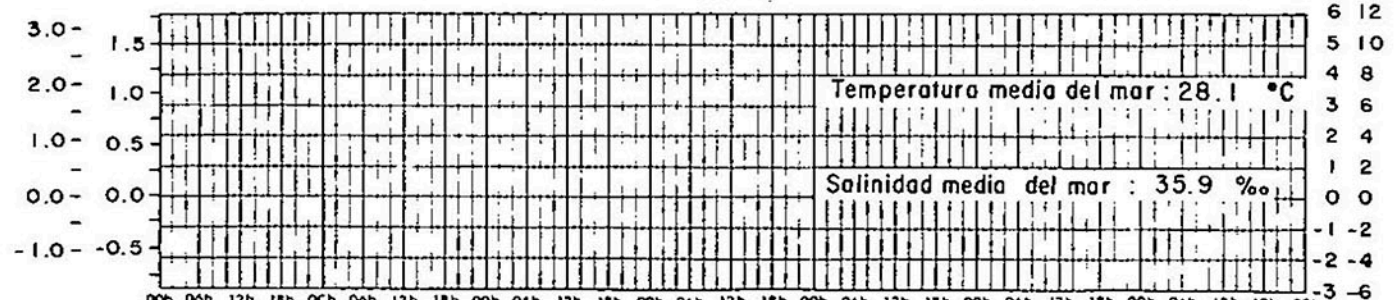
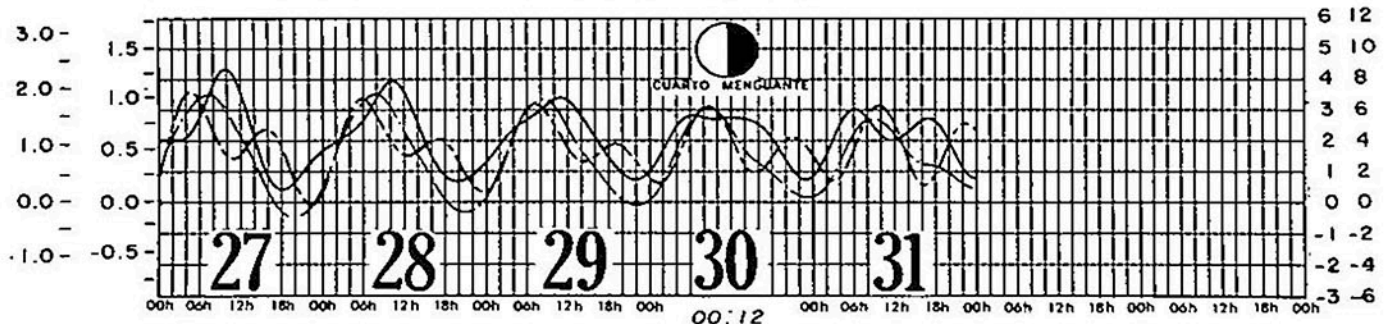
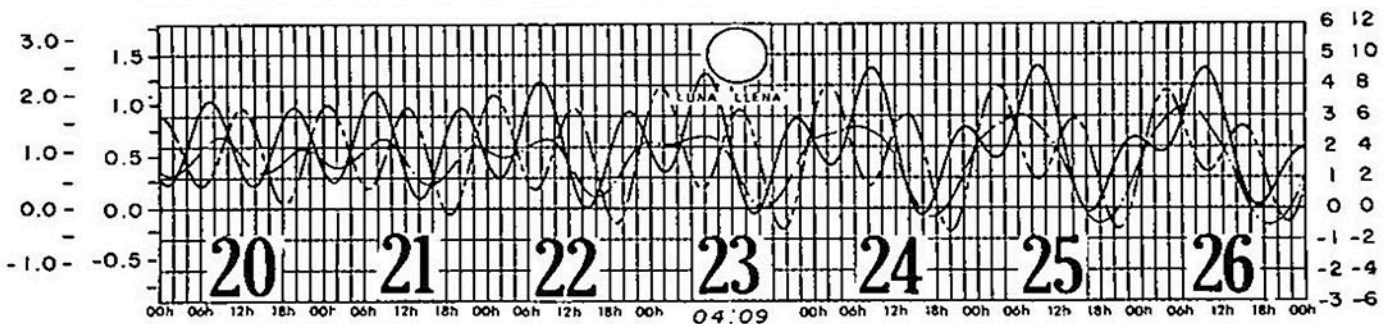
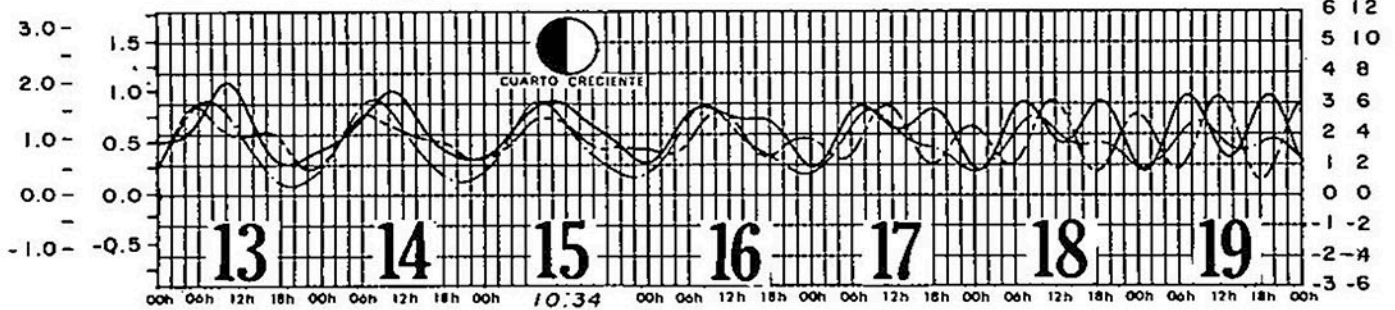
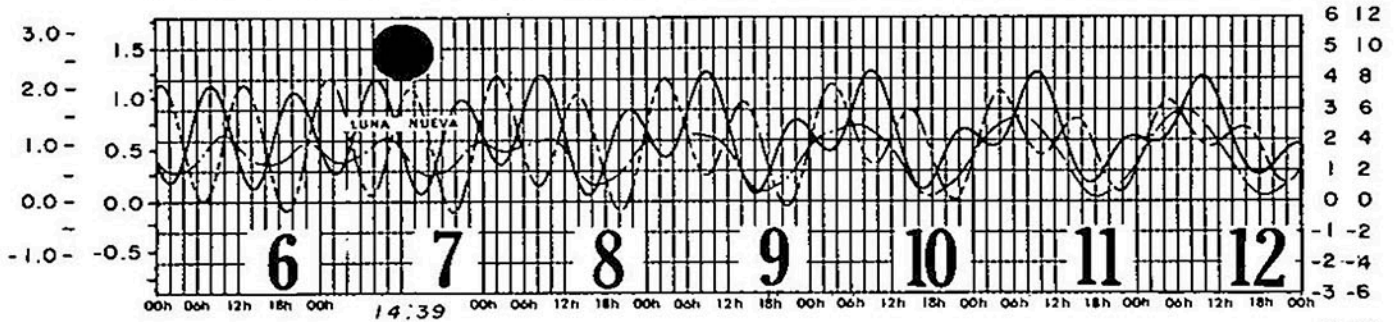
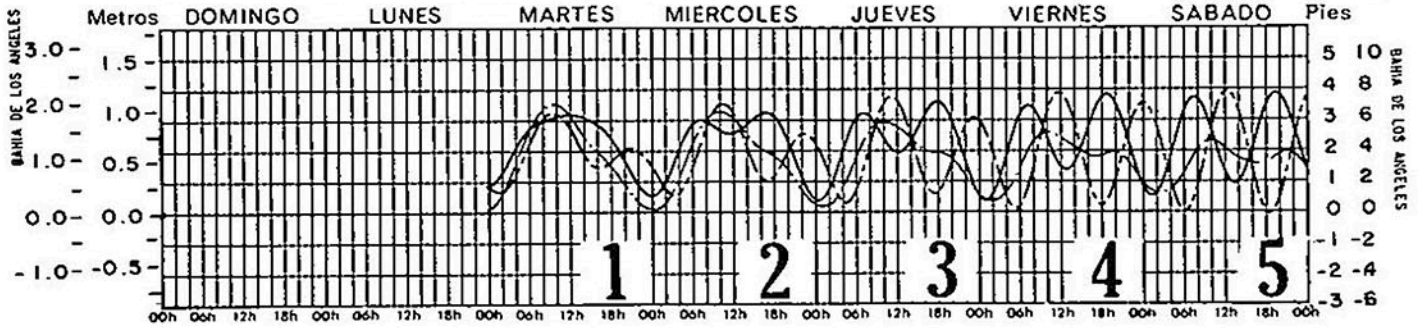
# OCTUBRE 1991

B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



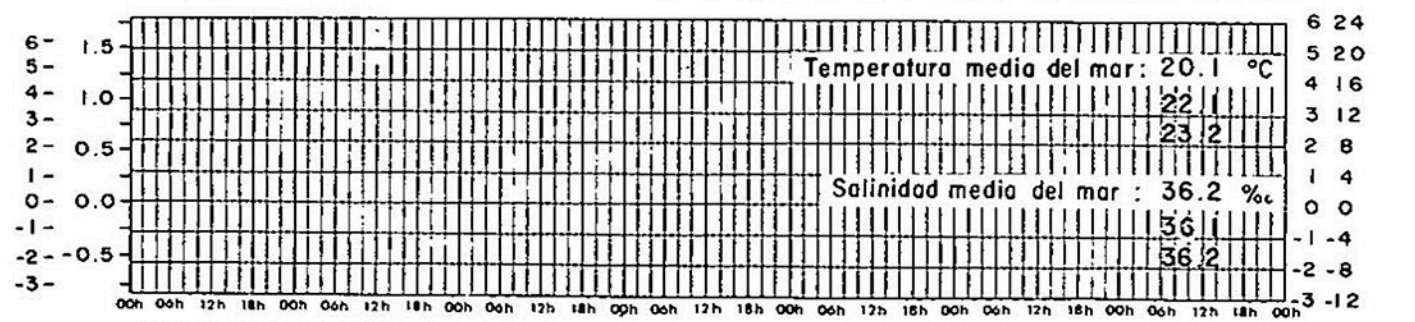
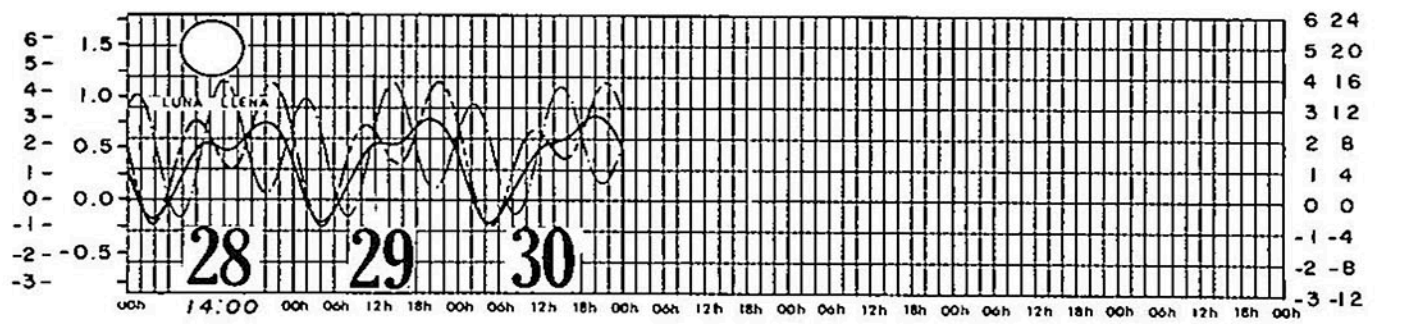
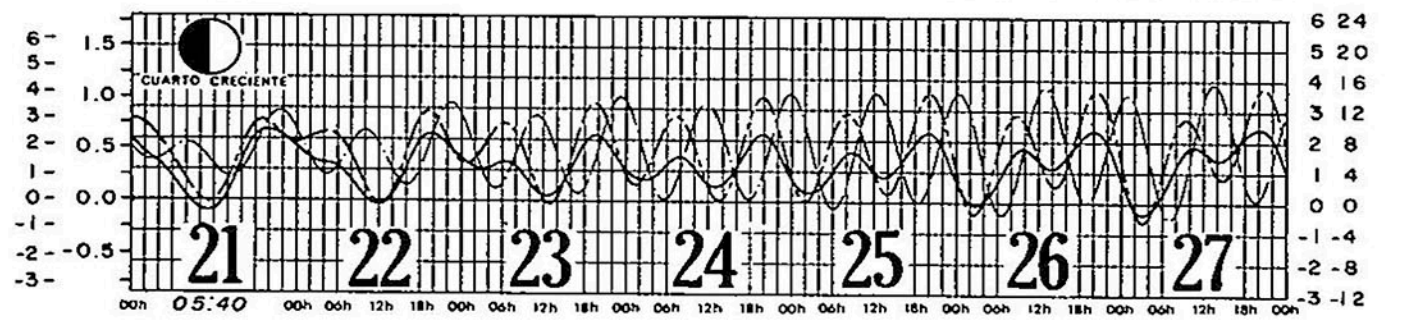
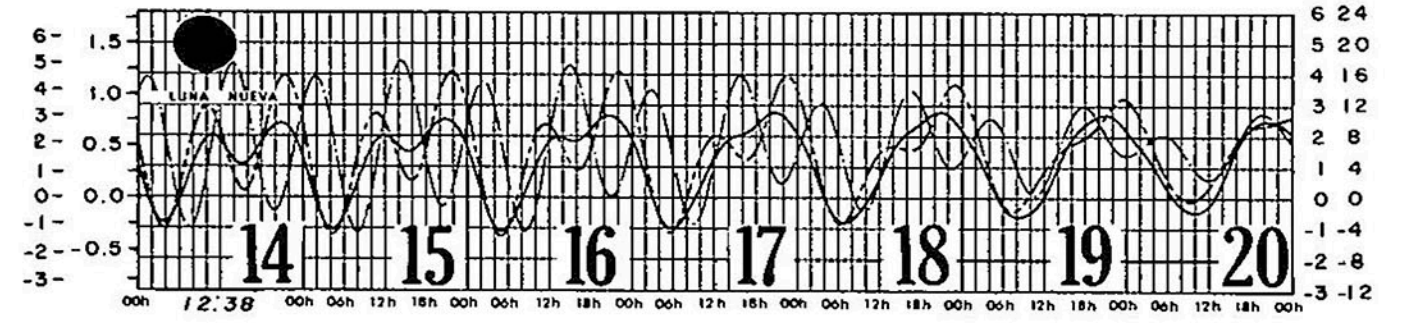
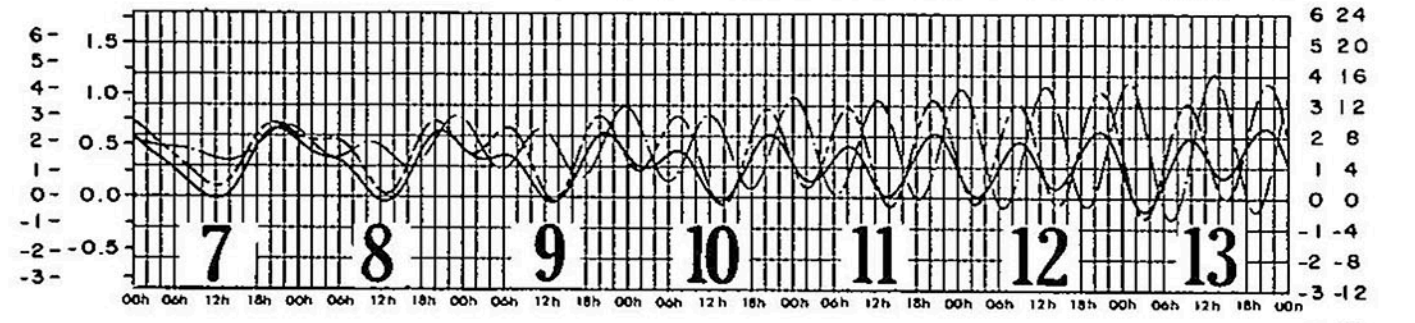
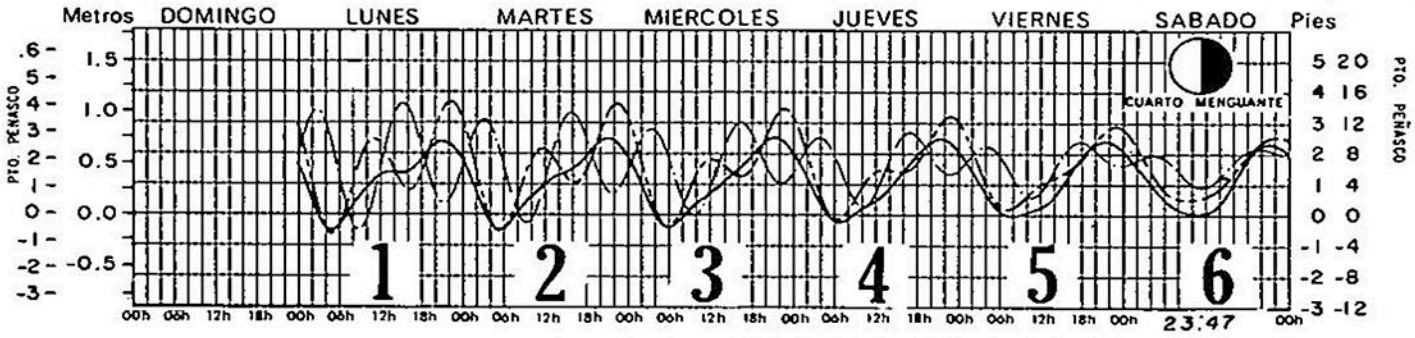


# ABRIL 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

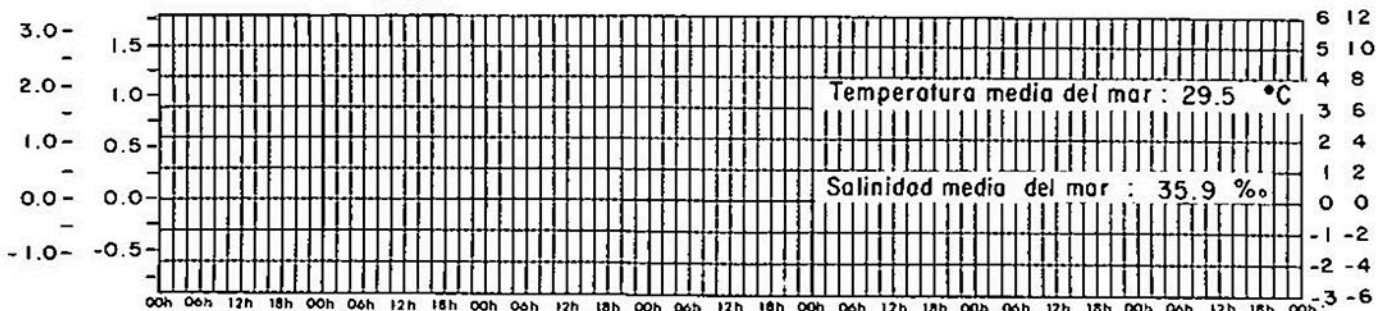
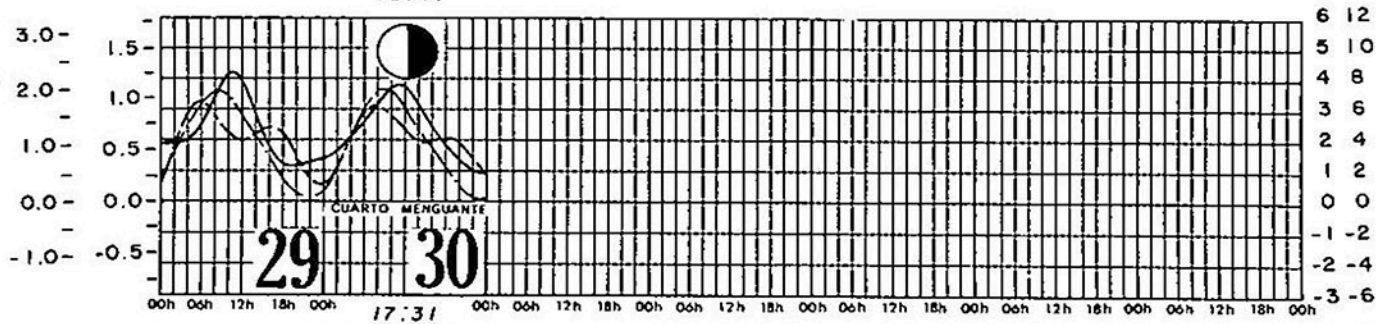
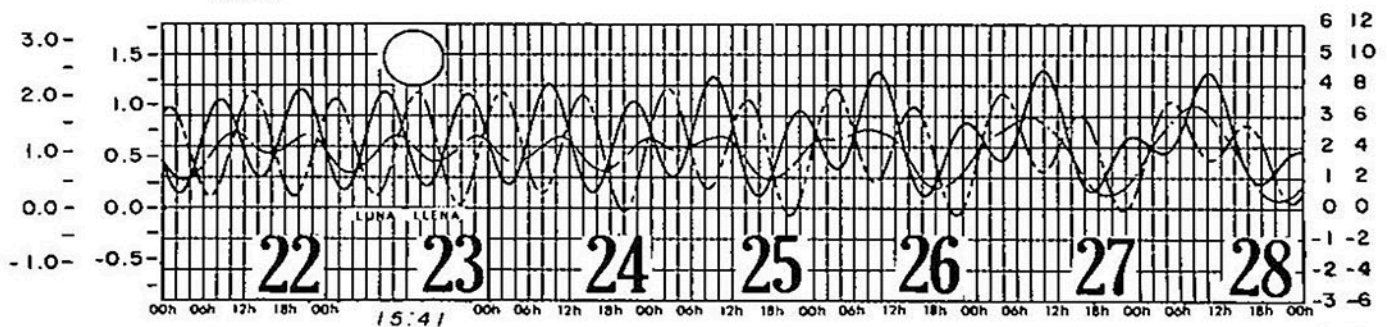
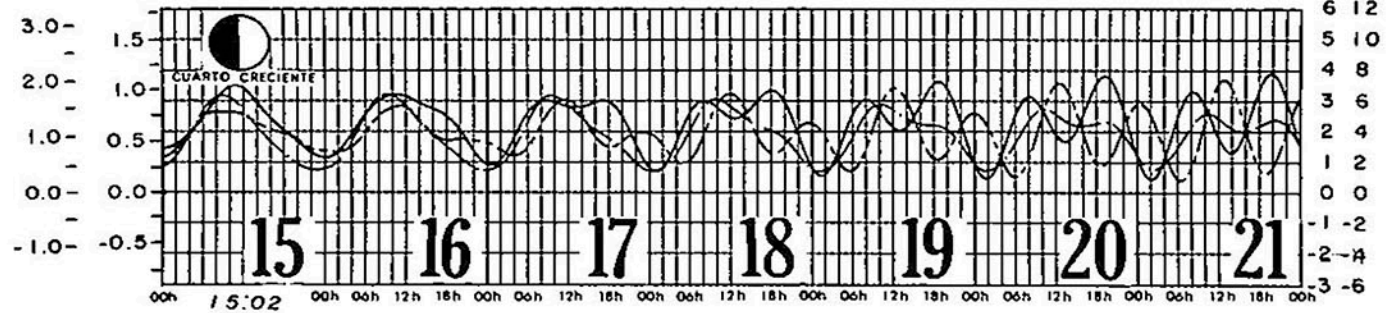
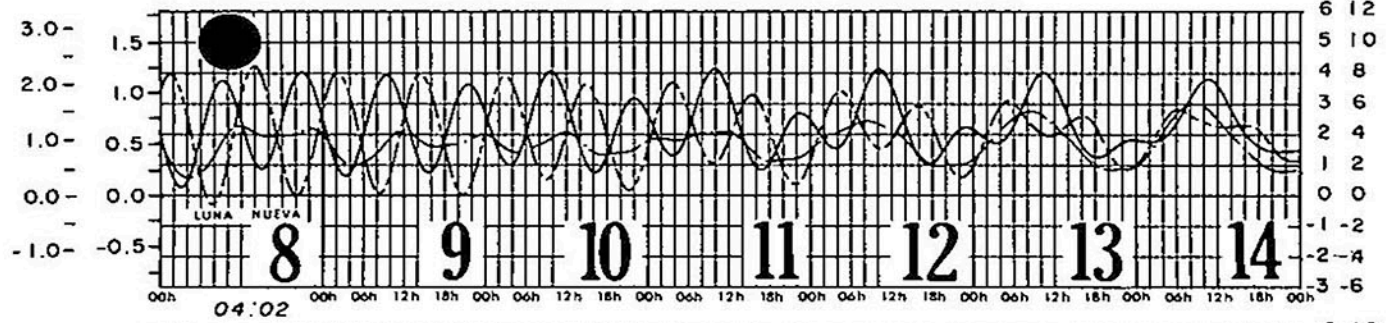
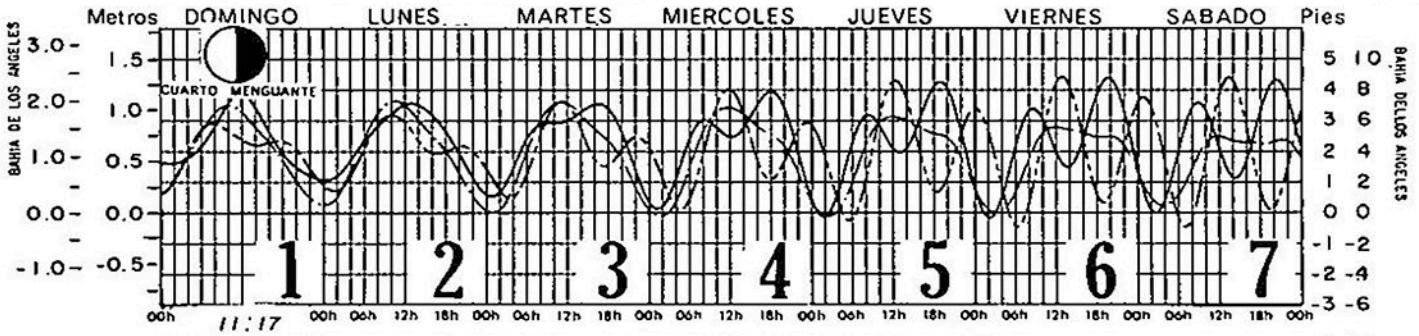
PLANO DE REFERENCIA: N.B.M.I.



# SEPTIEMBRE 1991

B. DE LOS ANGELES, B.C.S.  
STA. ROSALIA, B.C.S.  
LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



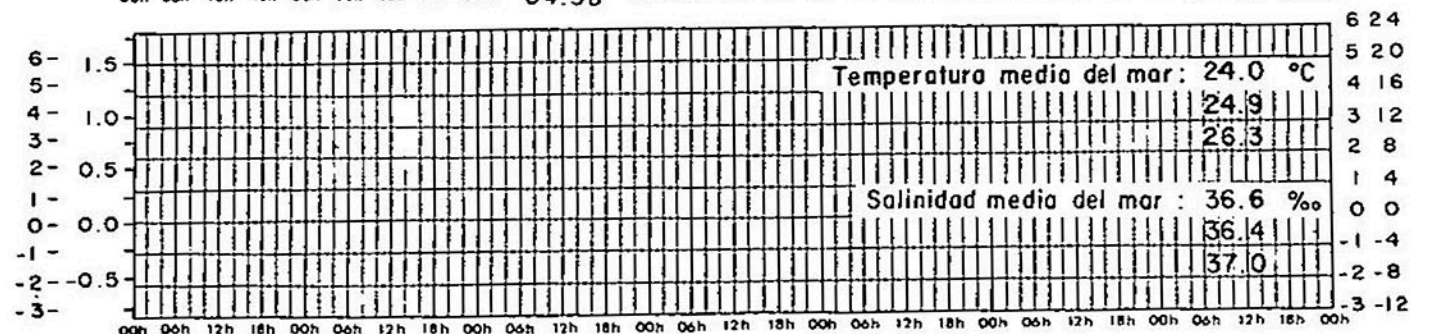
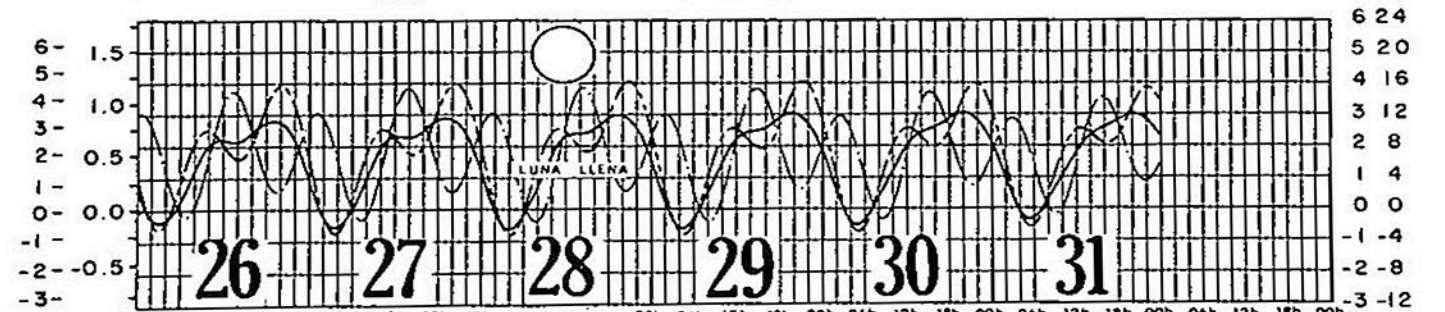
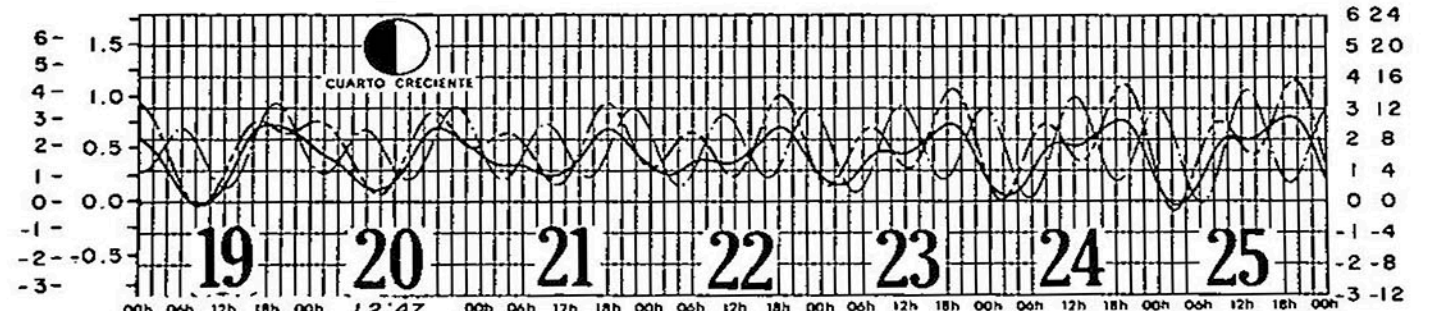
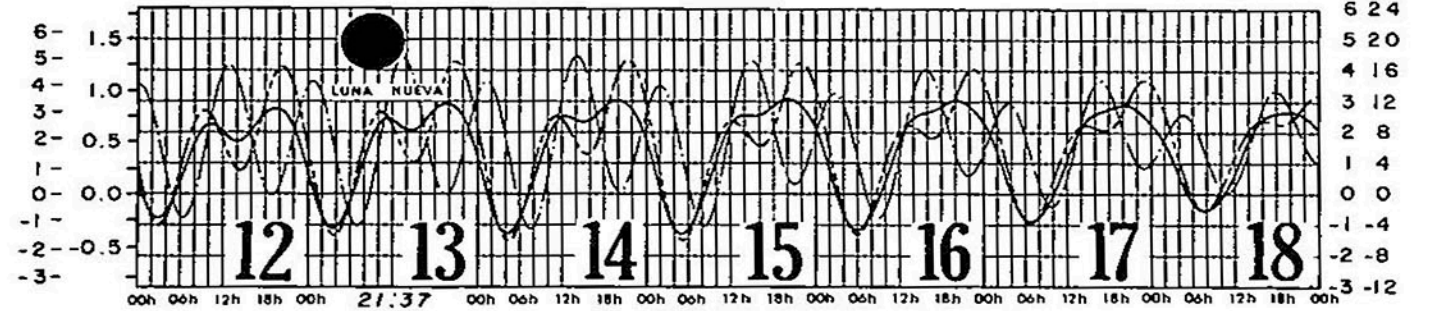
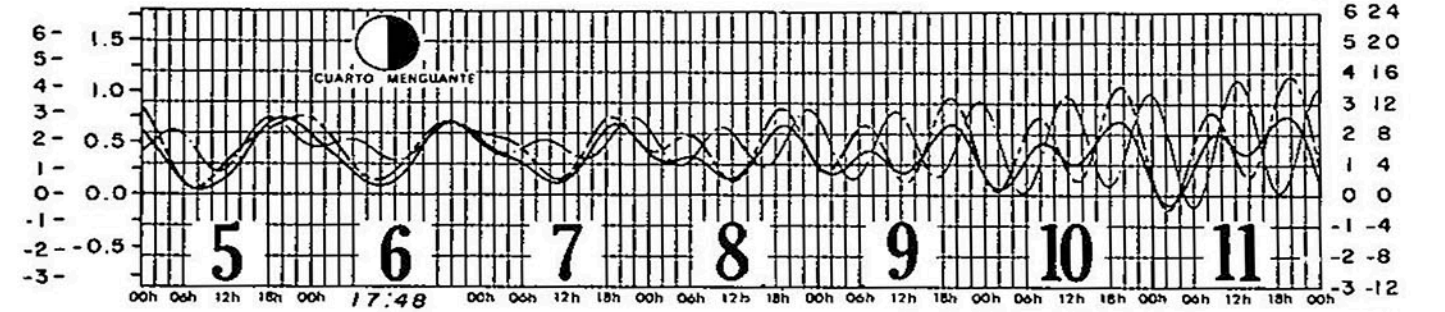
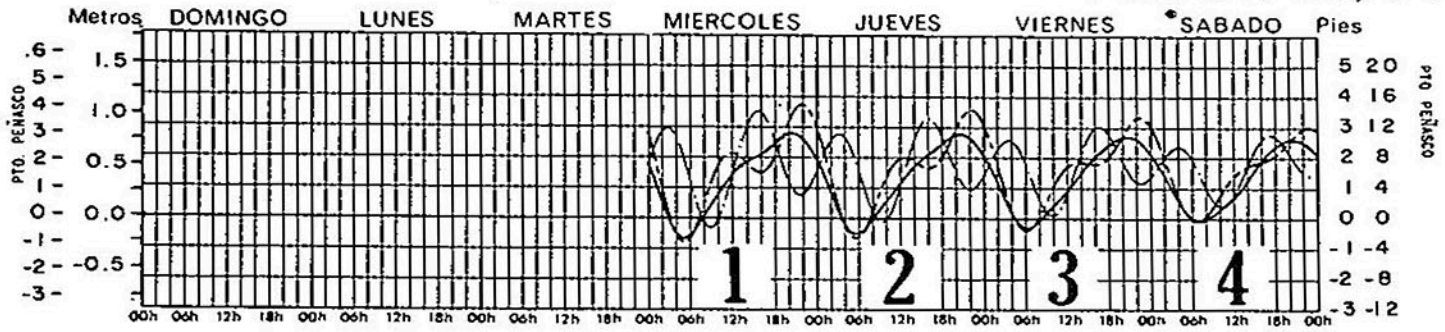


# MAYO 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M.1.



# AGLSIJ 1991

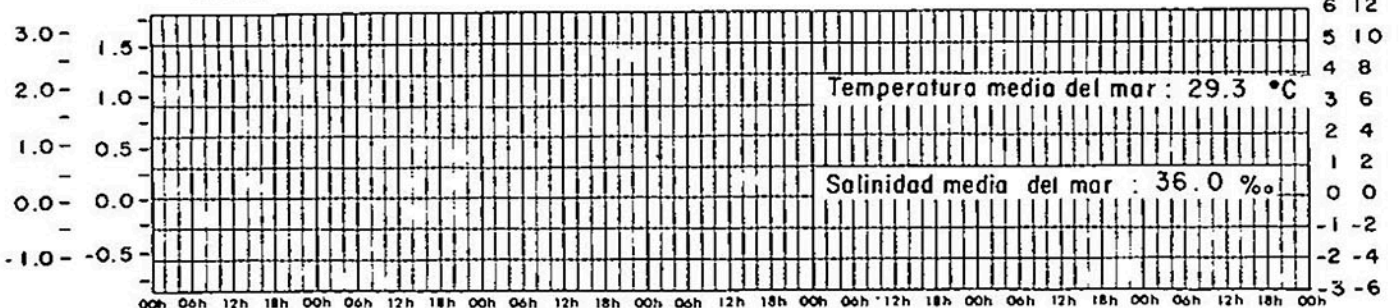
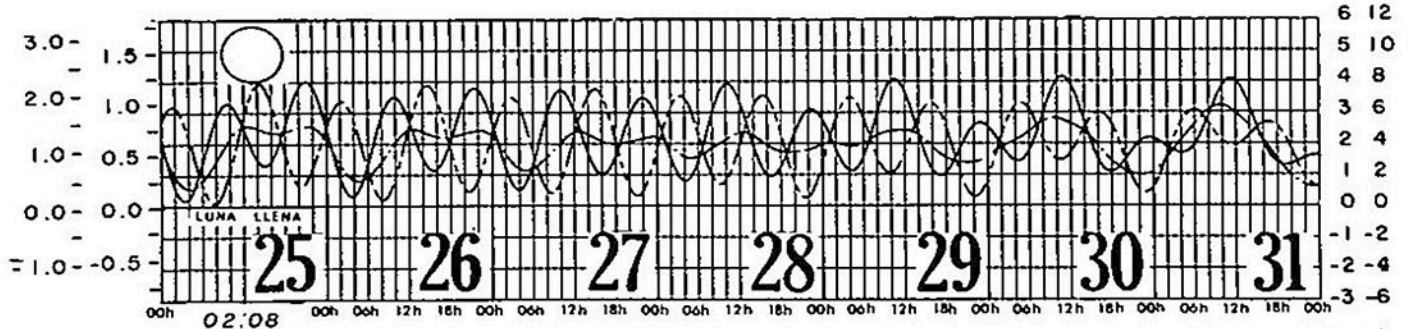
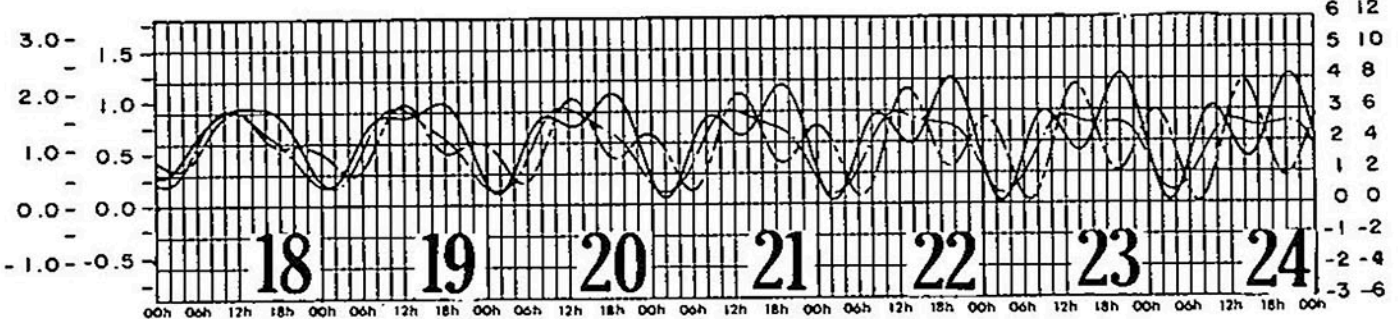
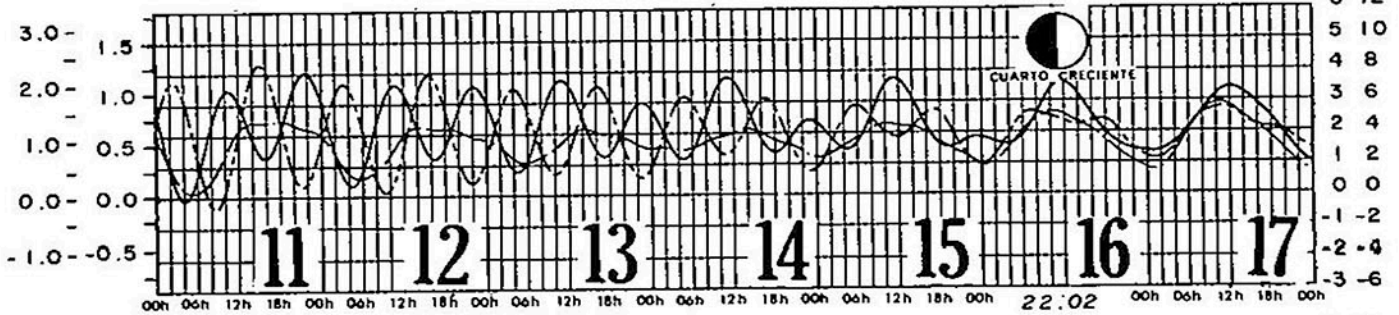
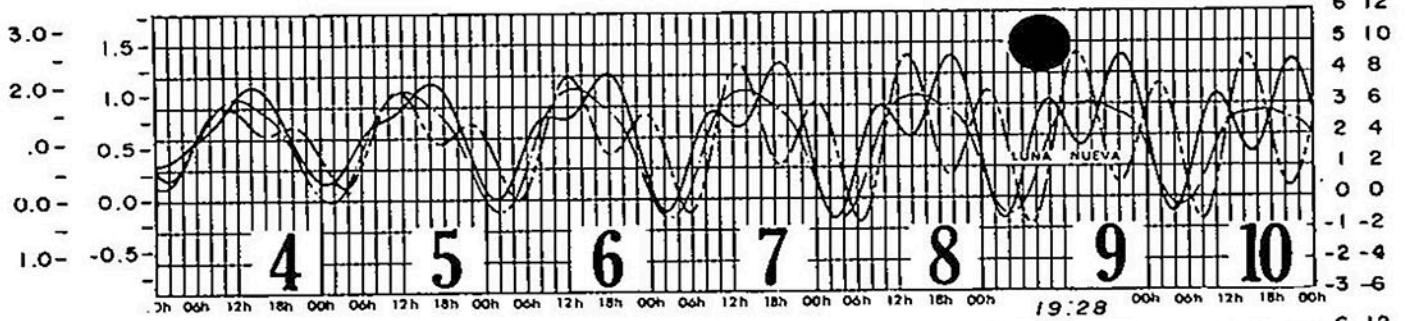
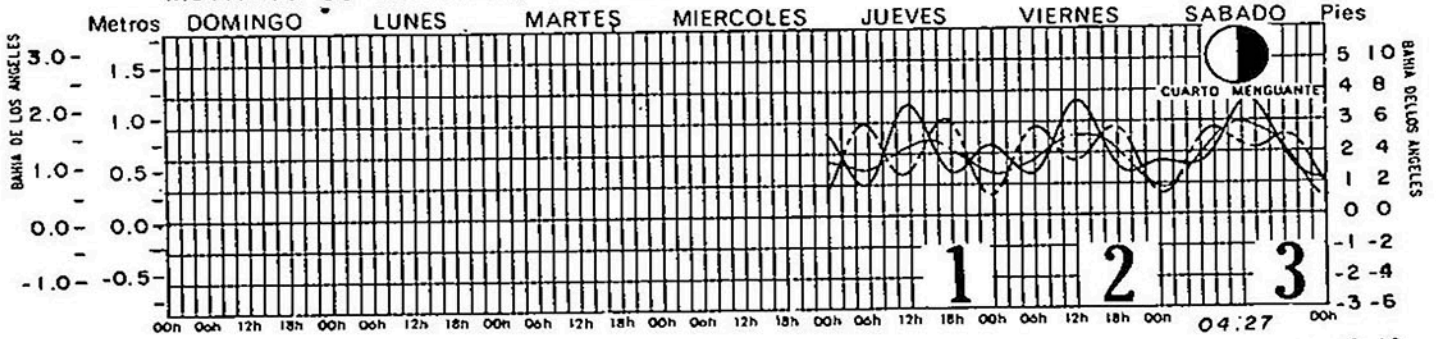
B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

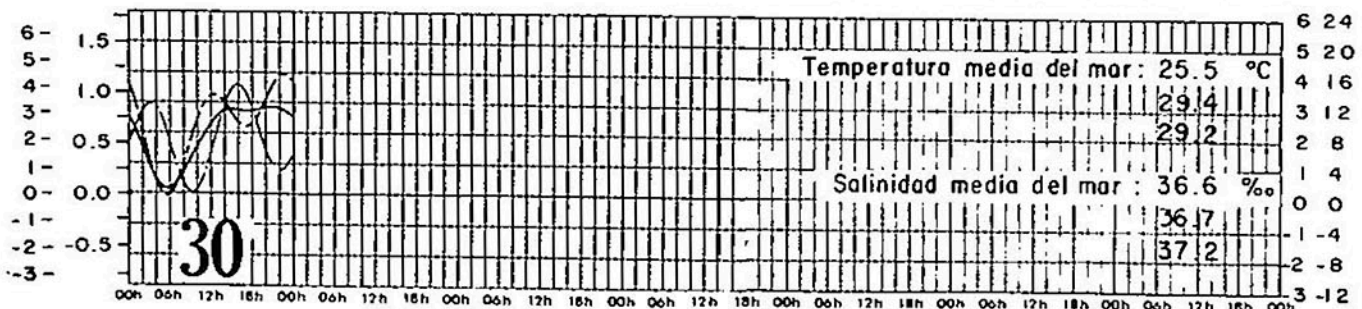
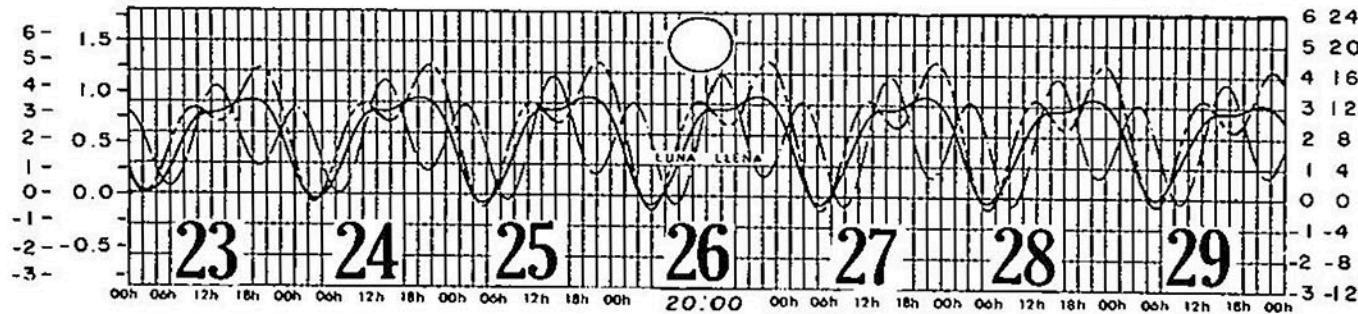
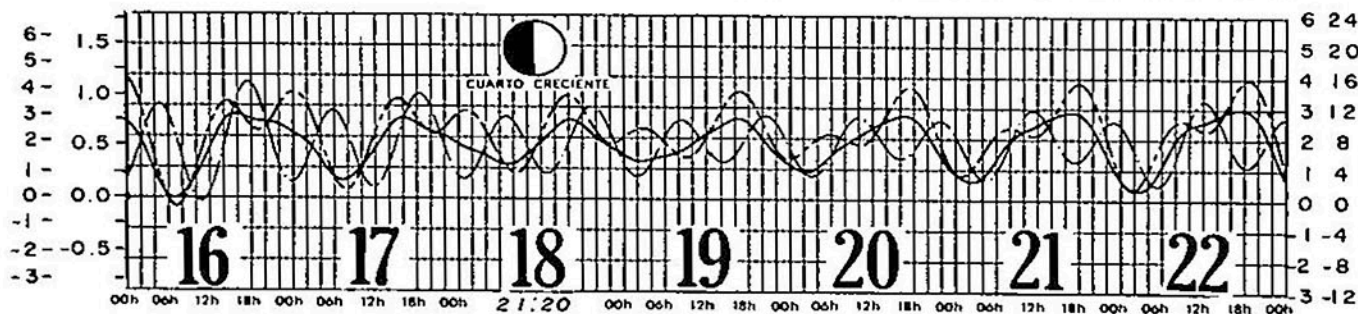
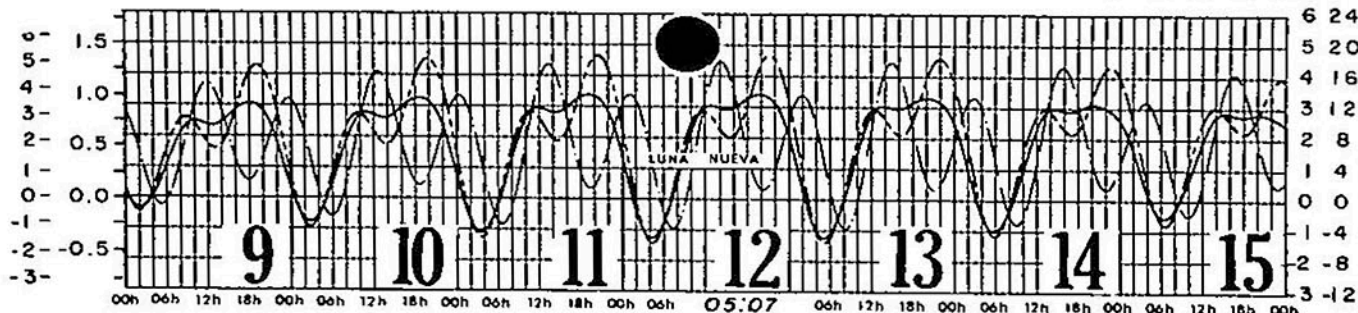
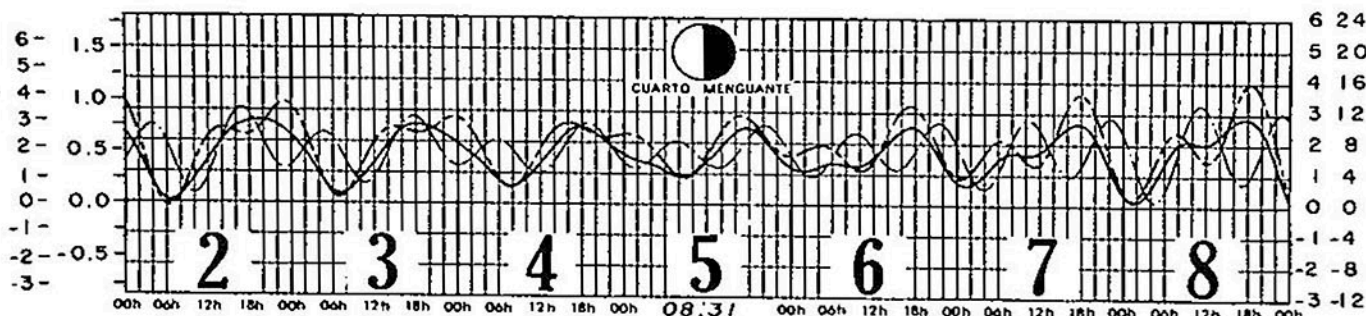
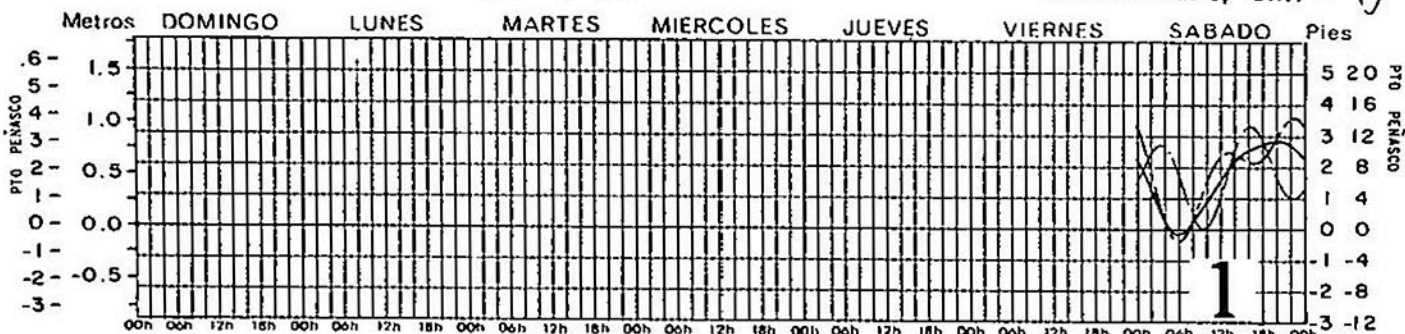




# JUNIO 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.





# JULIO 1991

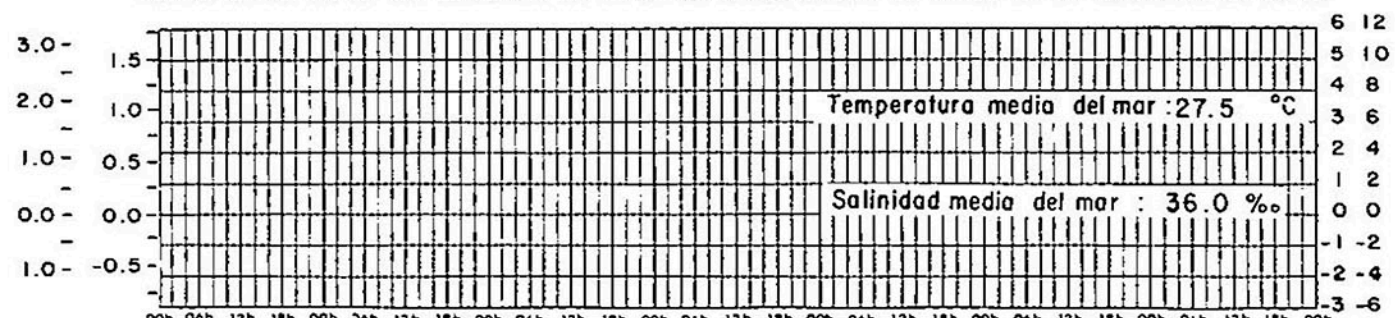
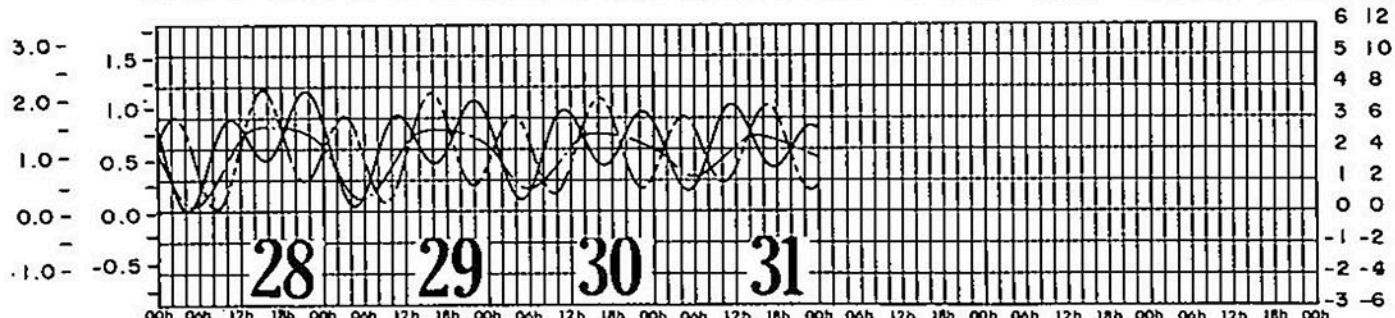
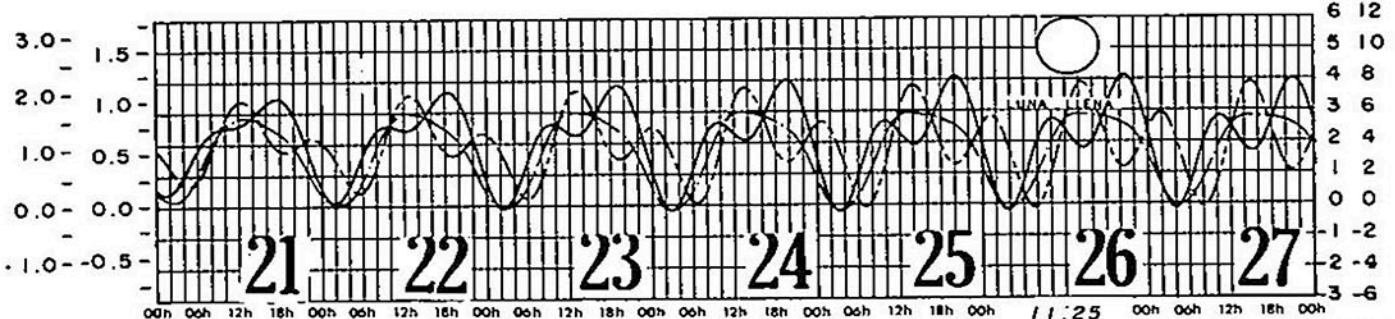
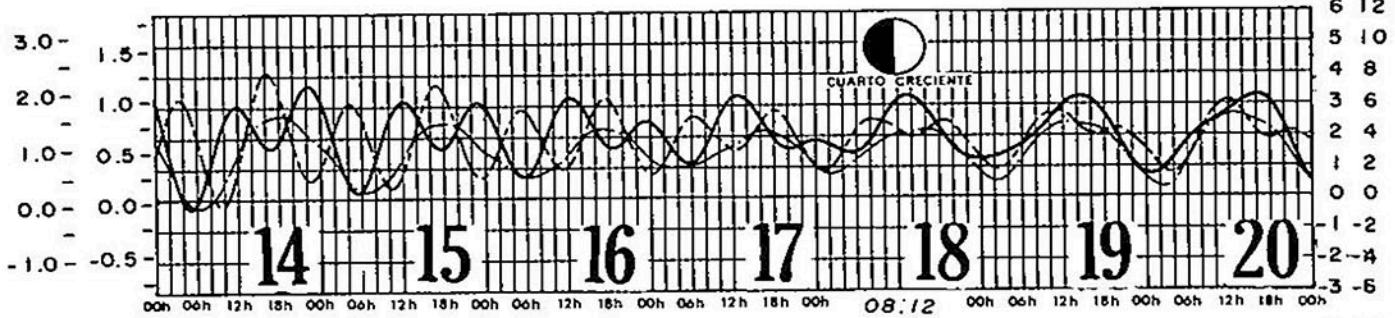
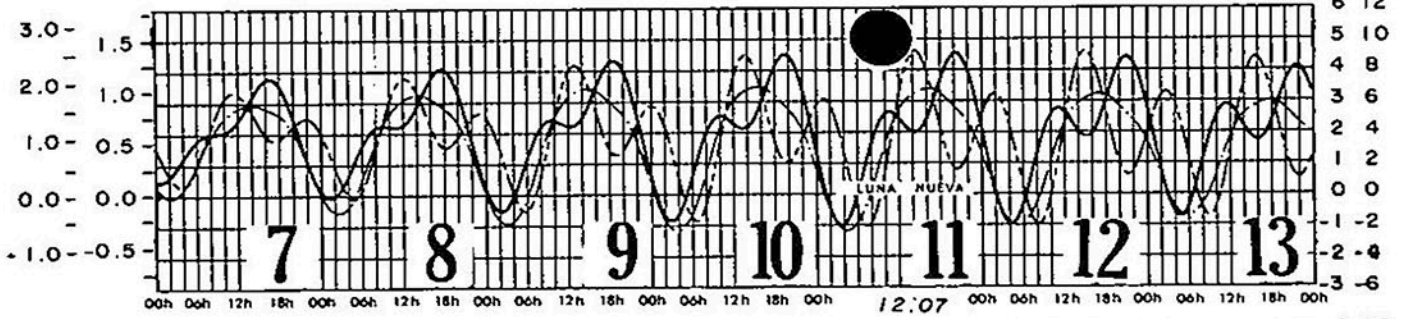
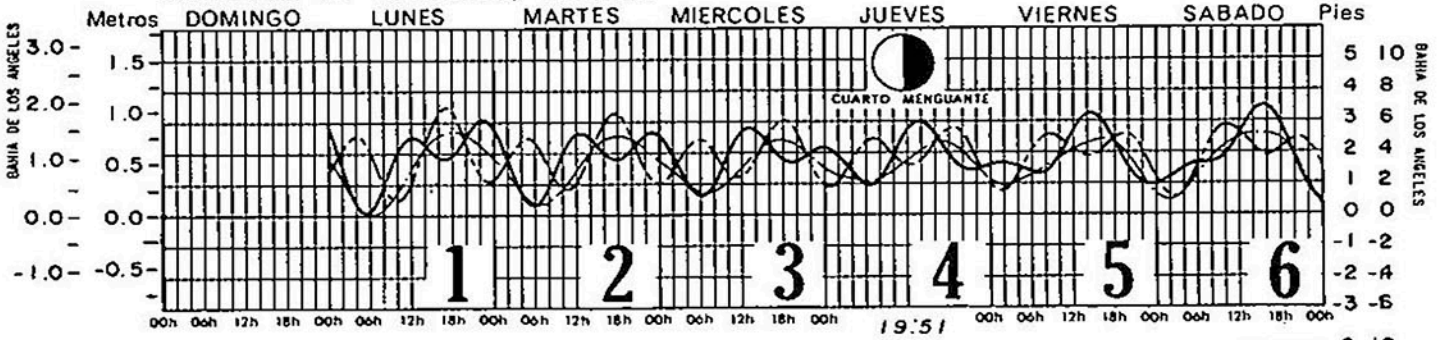
B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.





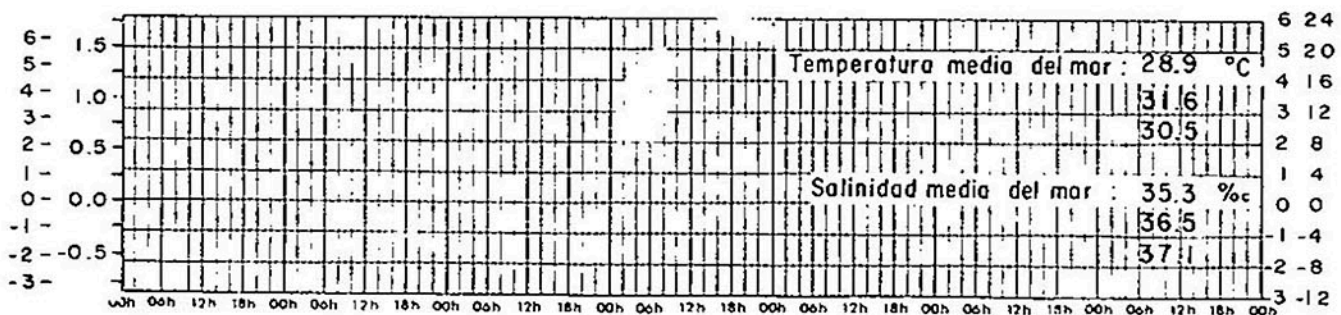
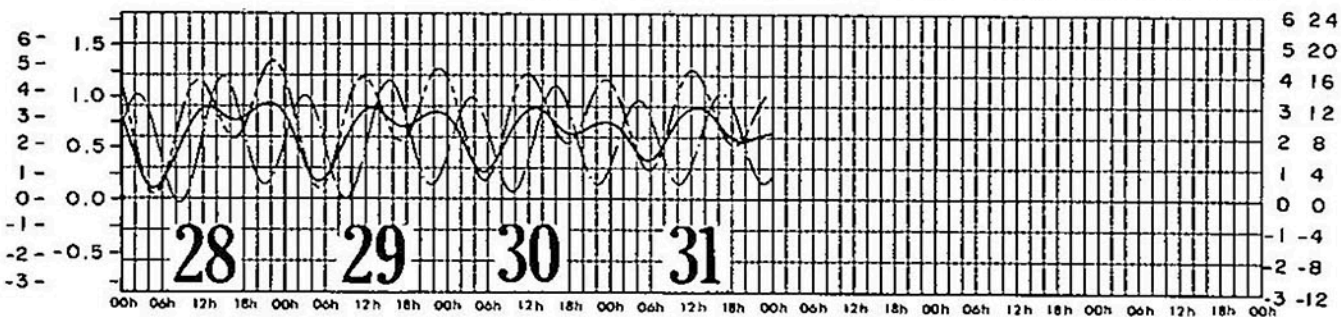
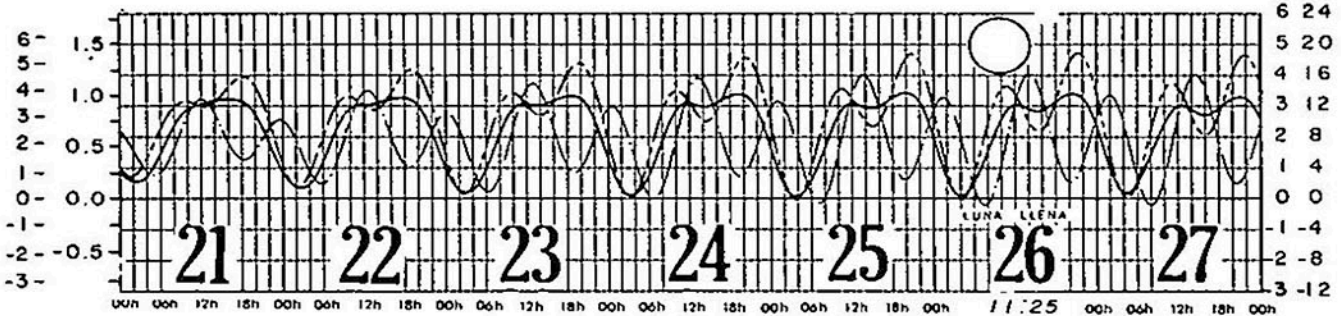
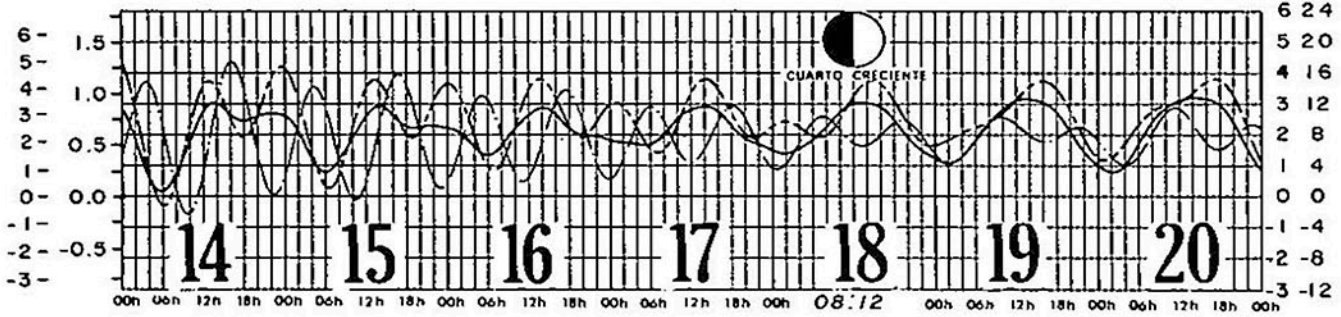
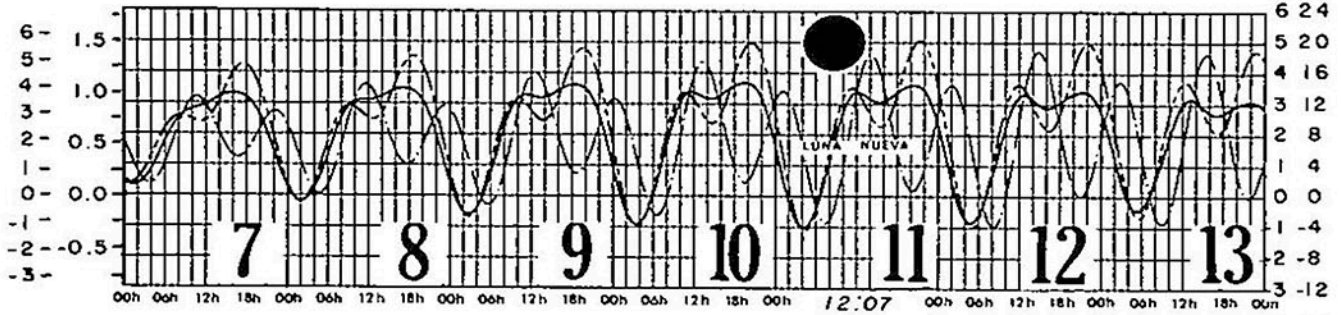
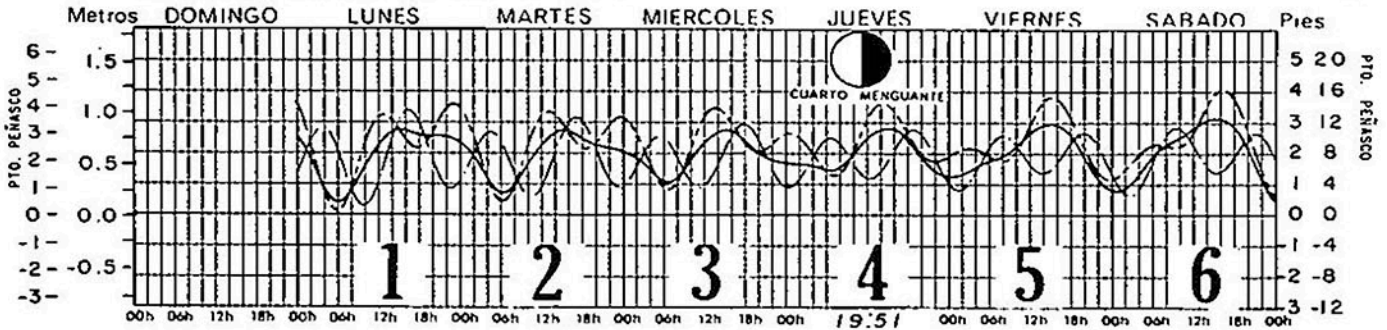


# JULIO 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA. N.B.M.I.



# JUNIO 1991

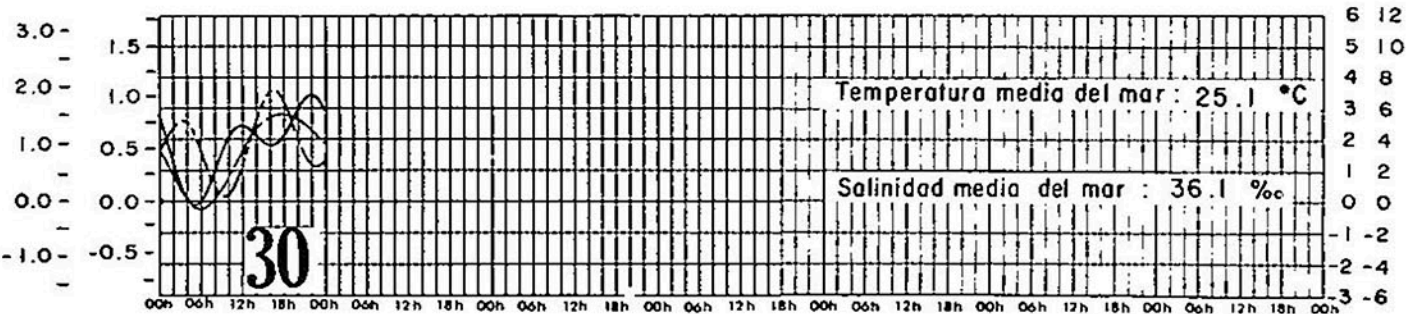
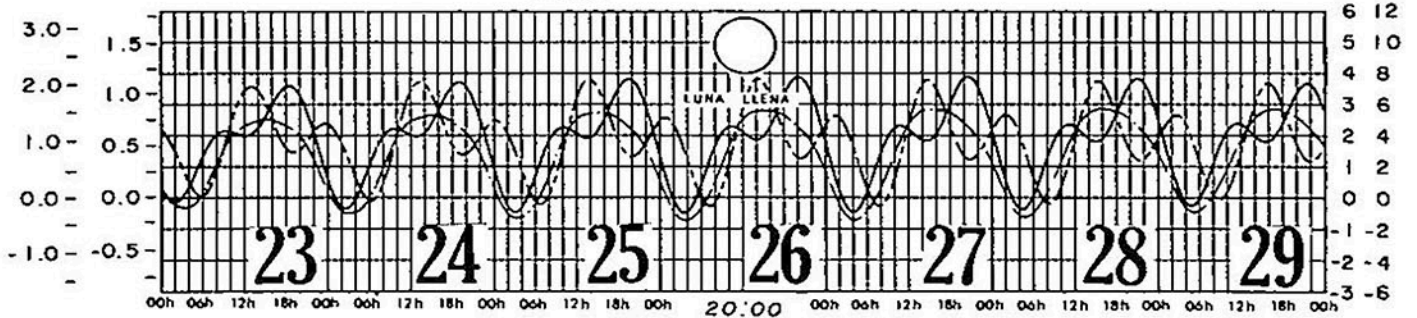
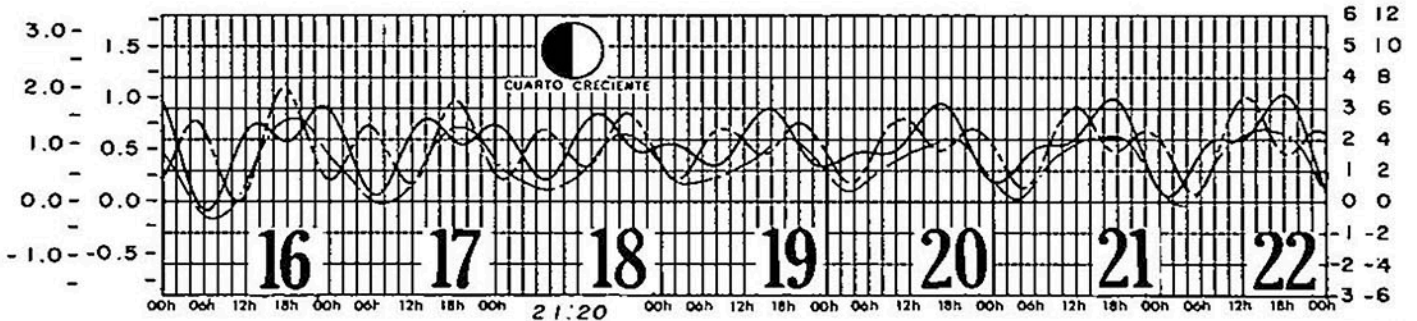
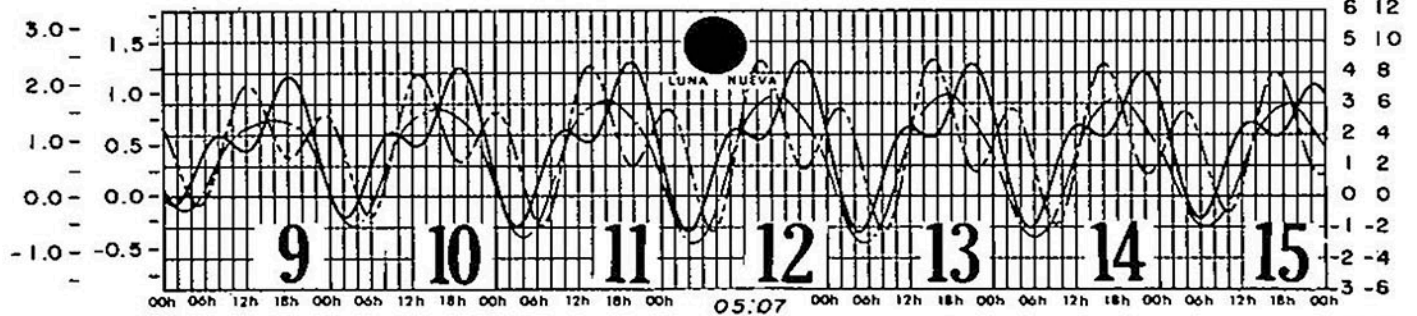
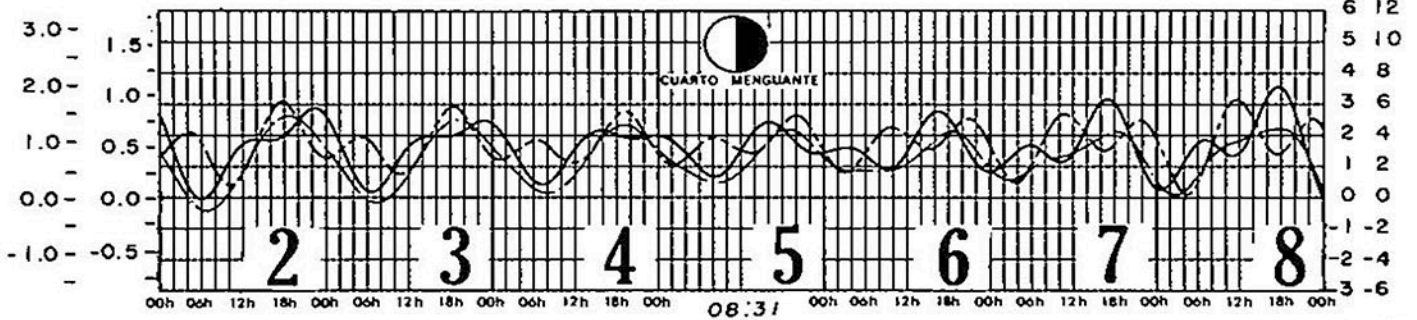
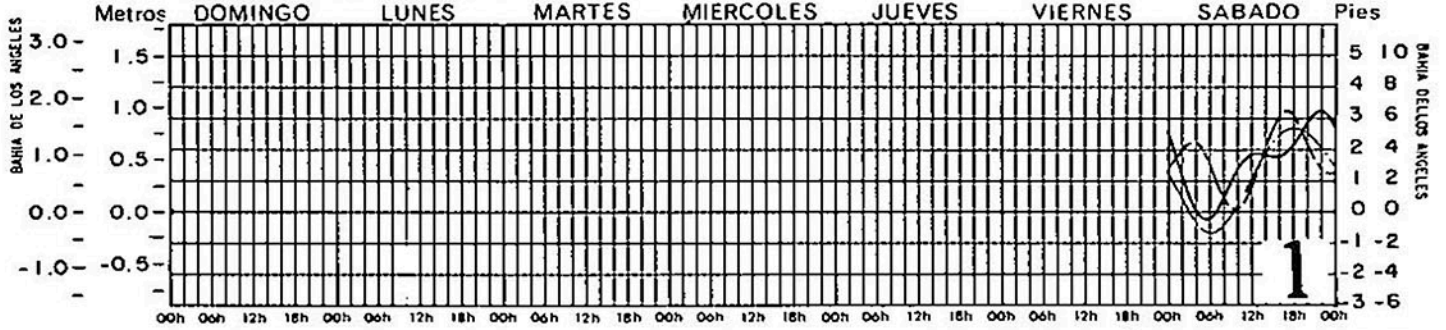
B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



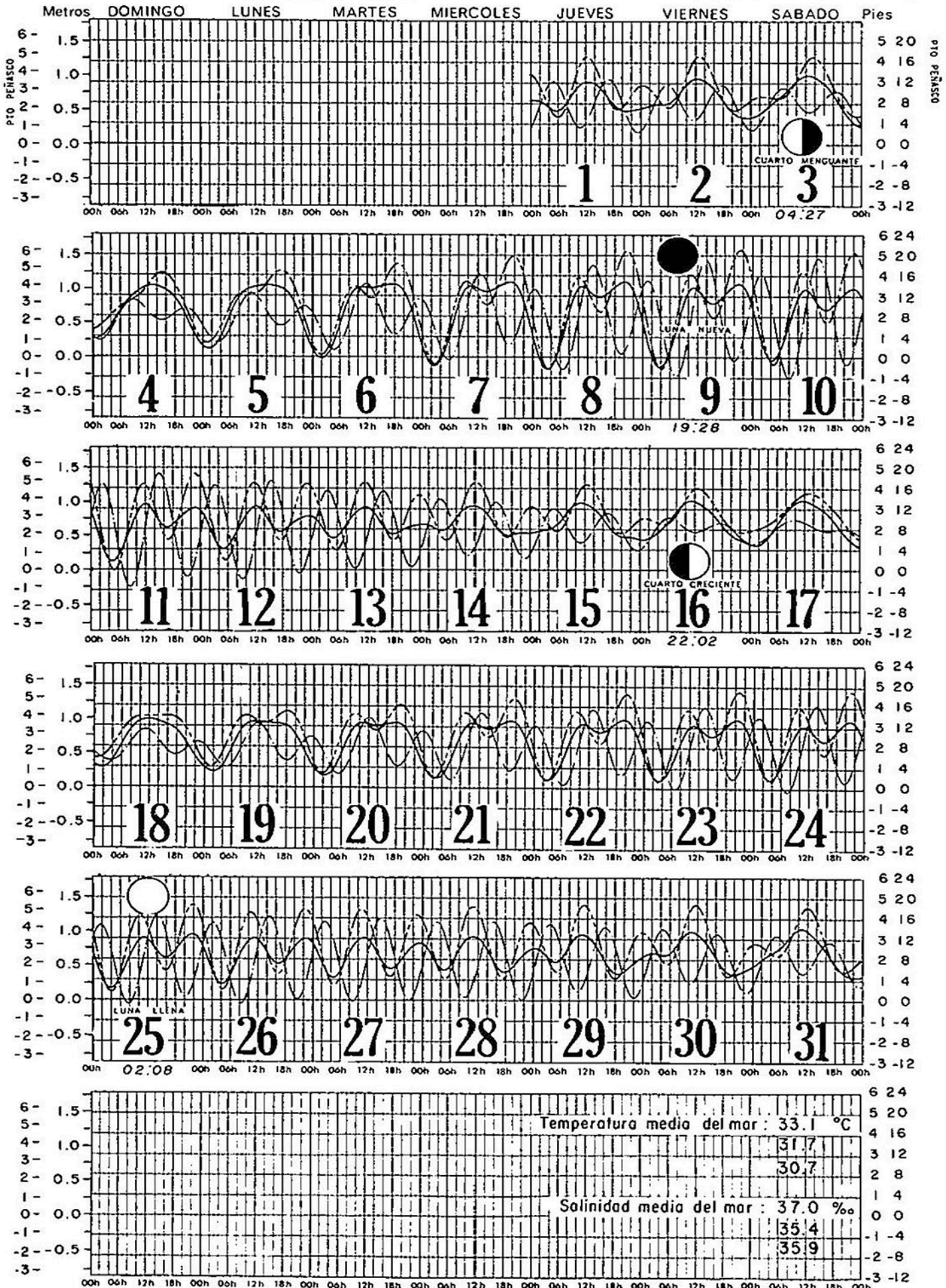


# AGOSTO 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M.I.

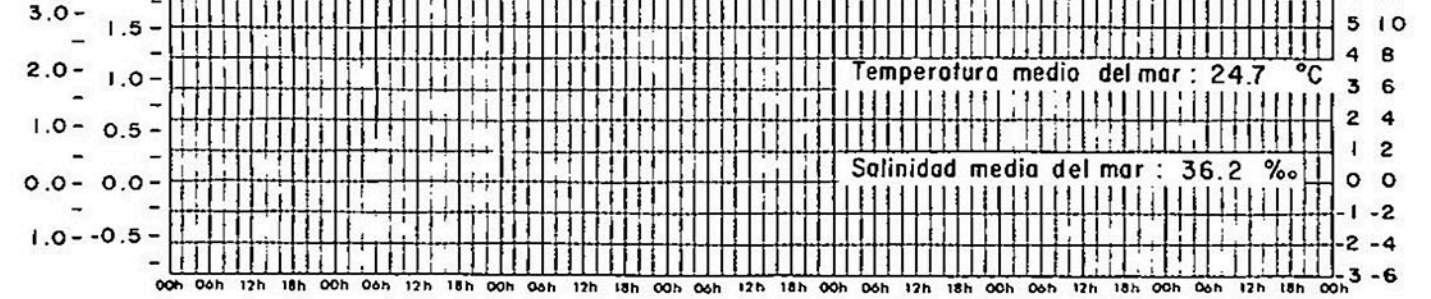
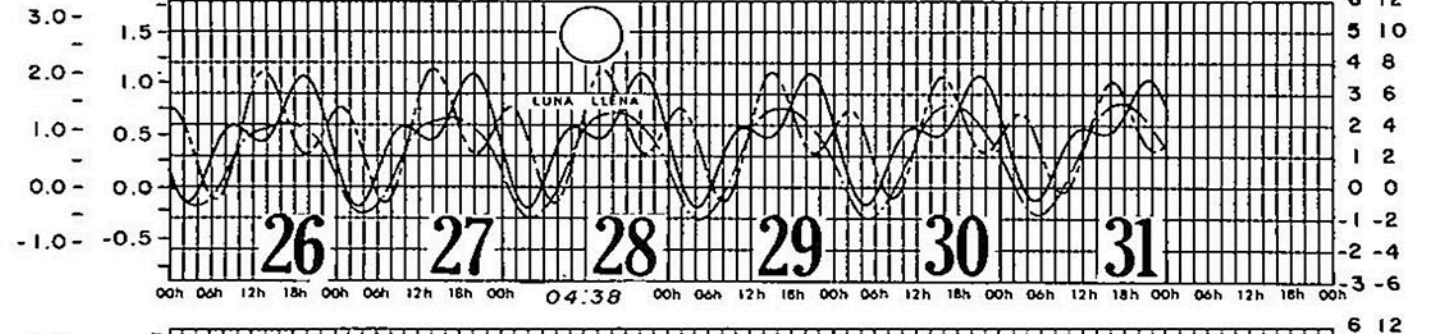
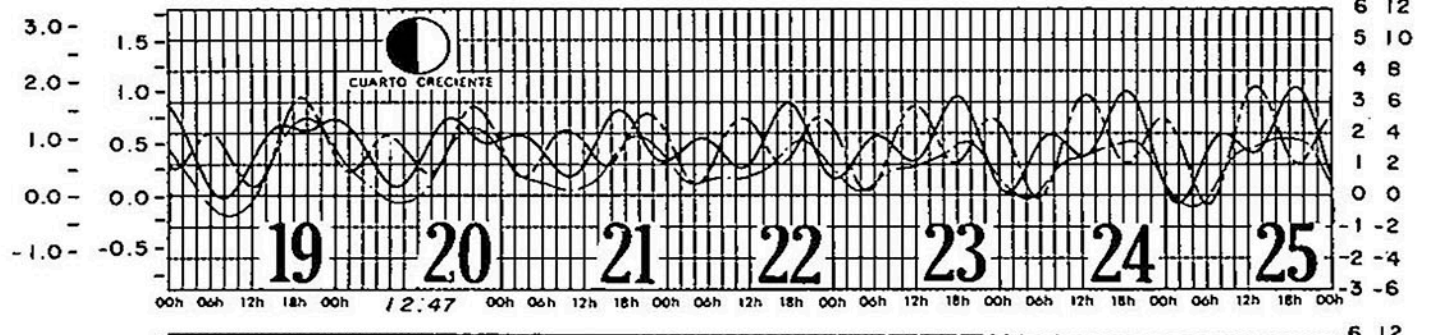
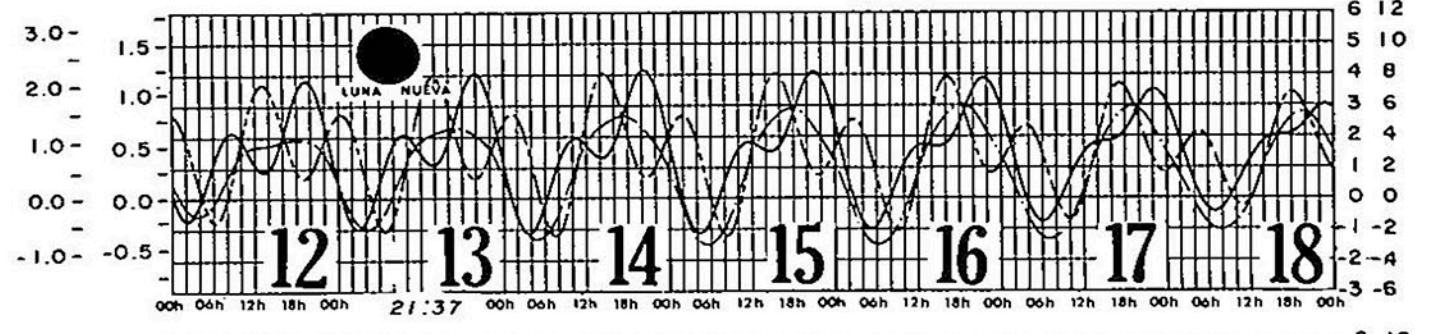
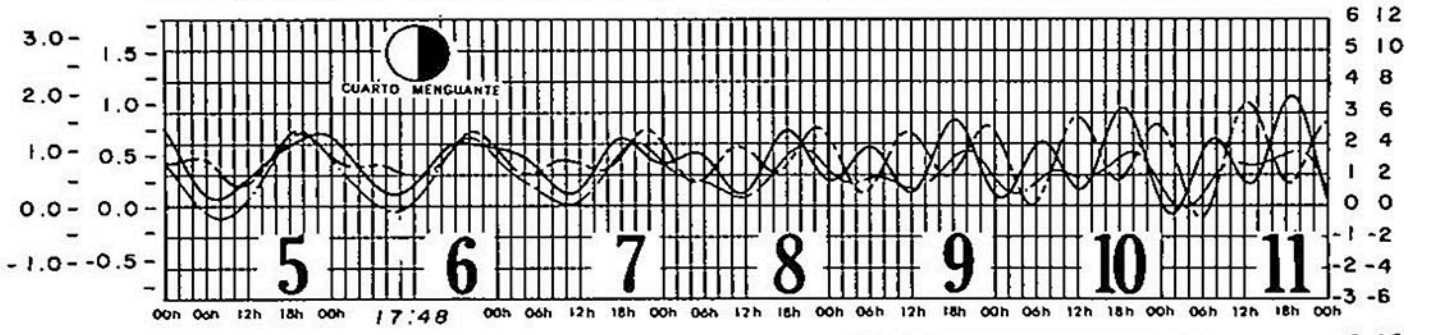
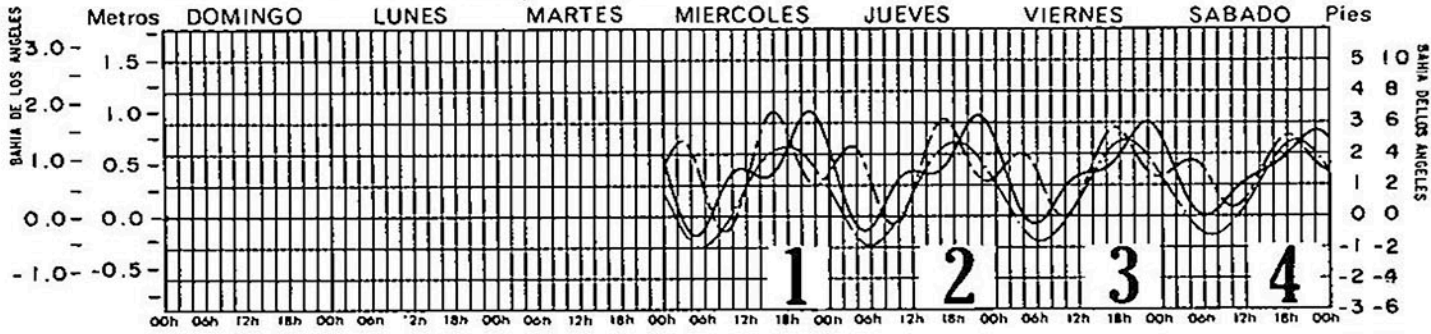


# MAYO 1991

B. DE LOS ANGELES, B.C.S.  
STA. ROSALIA, B.C.S.  
LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



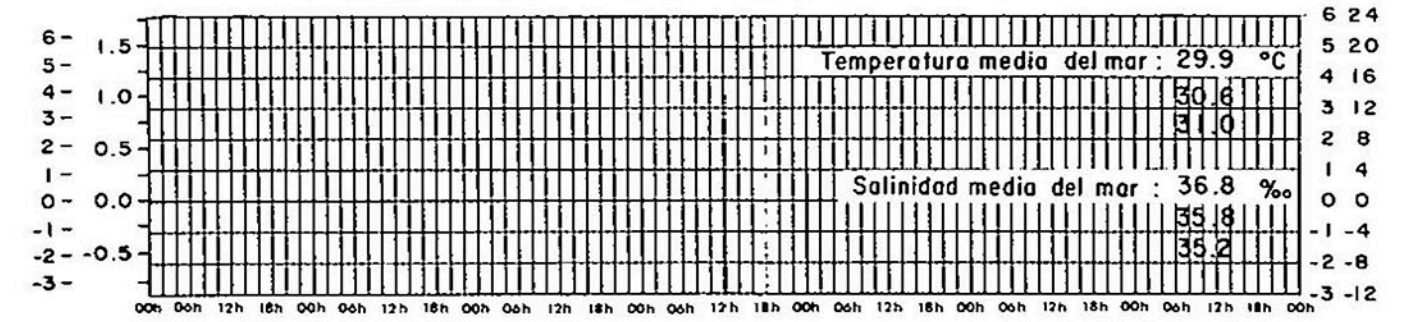
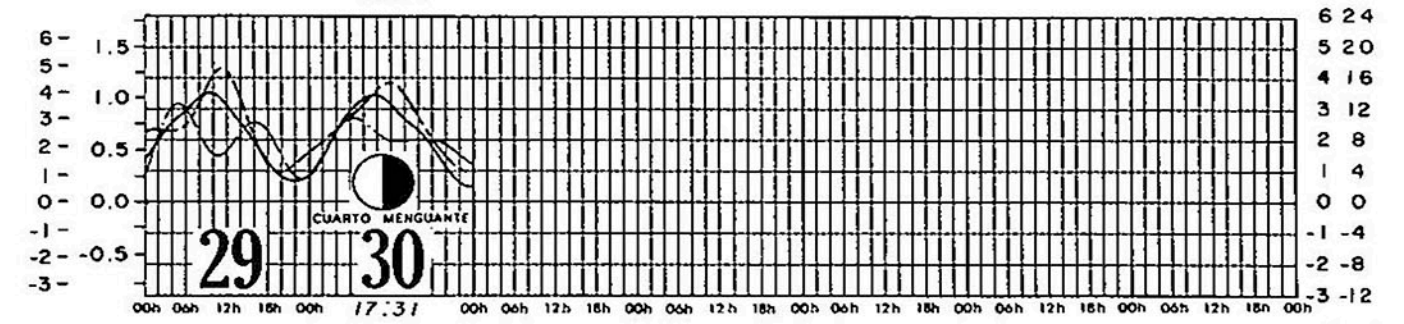
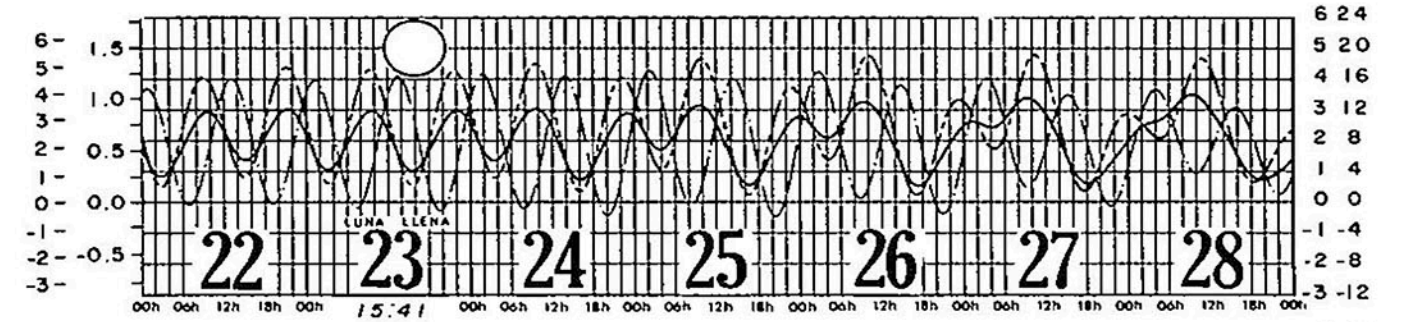
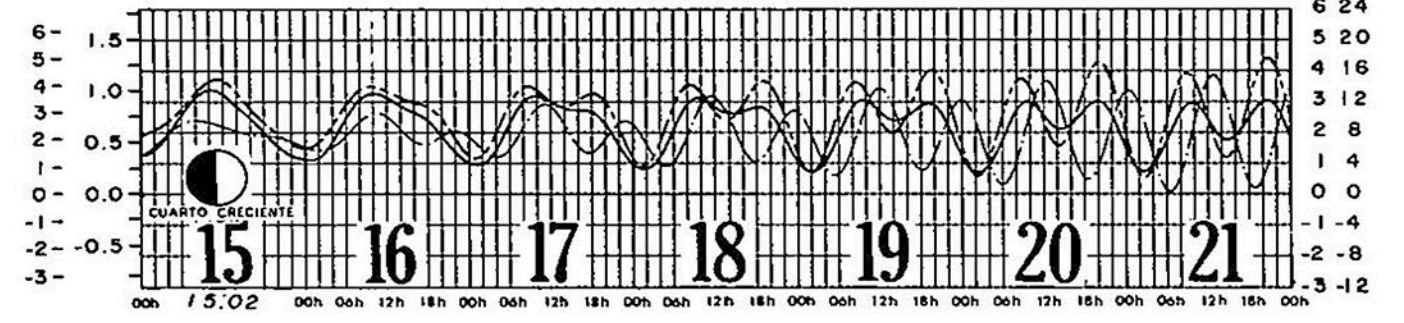
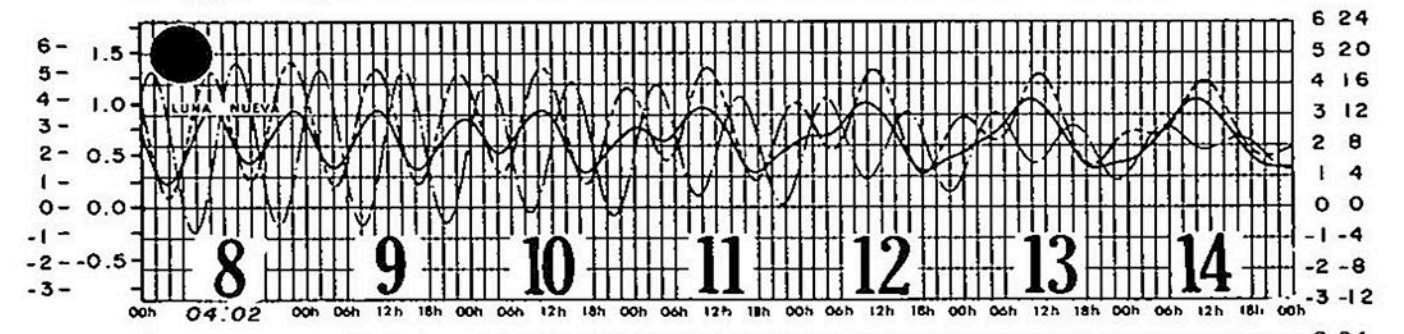
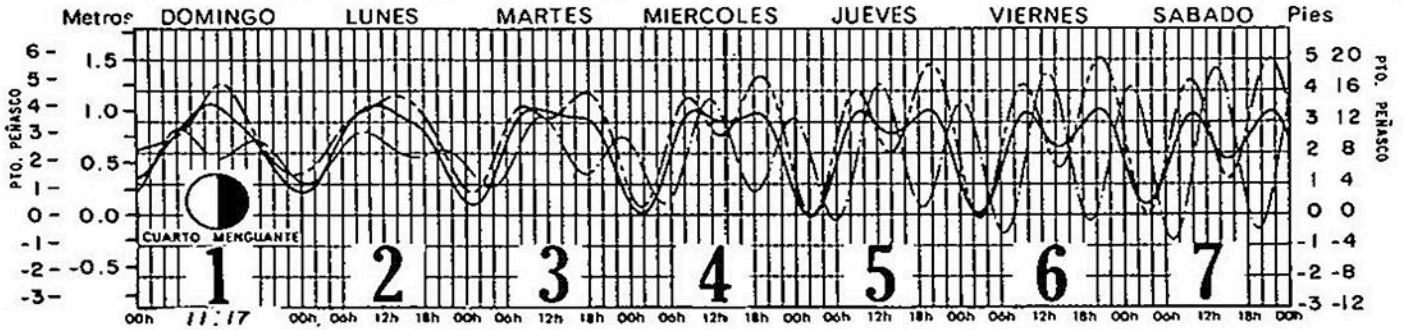


# SEPTIEMBRE 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



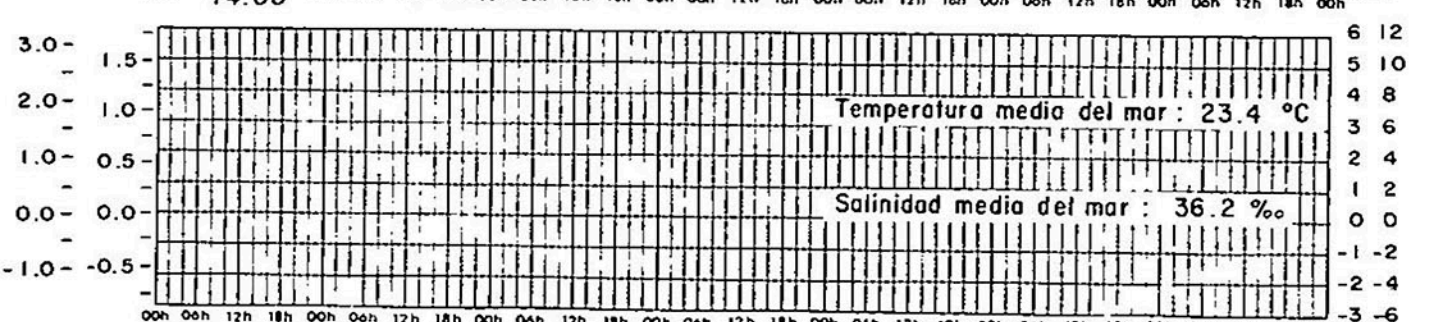
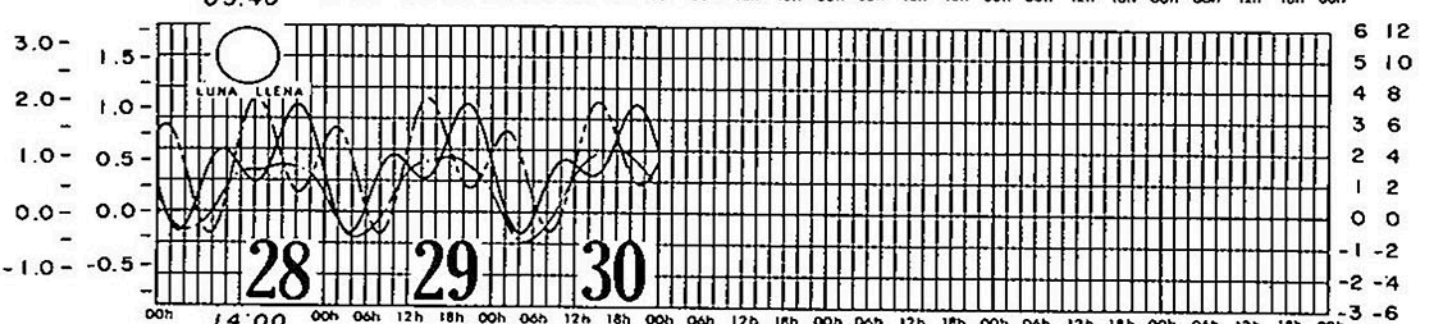
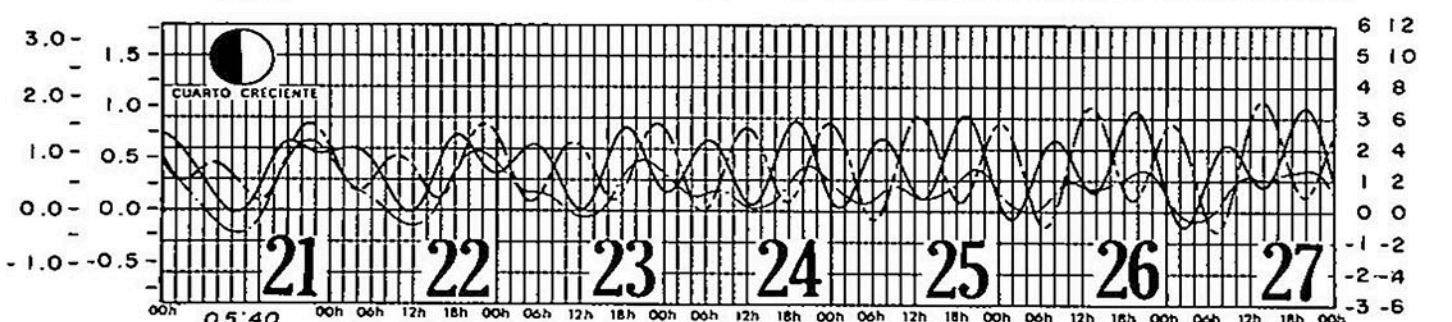
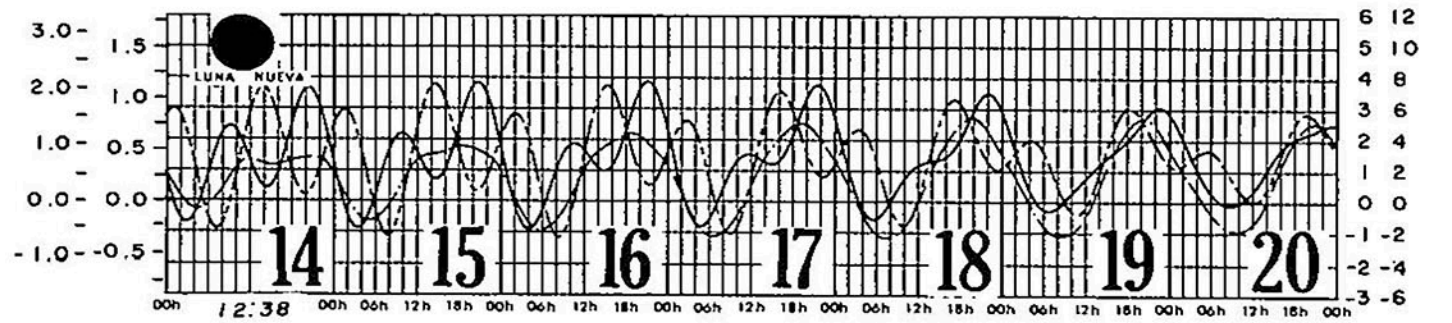
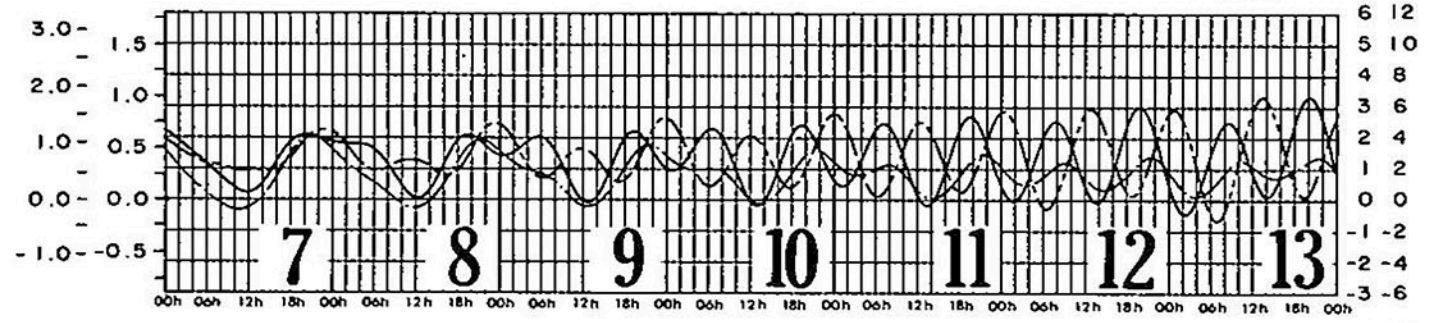
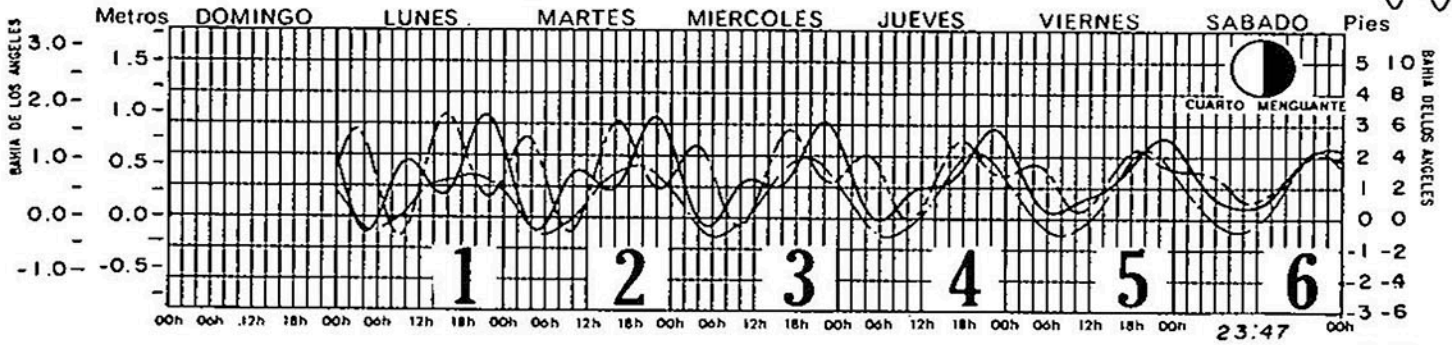
# ABRIL 1991

B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.

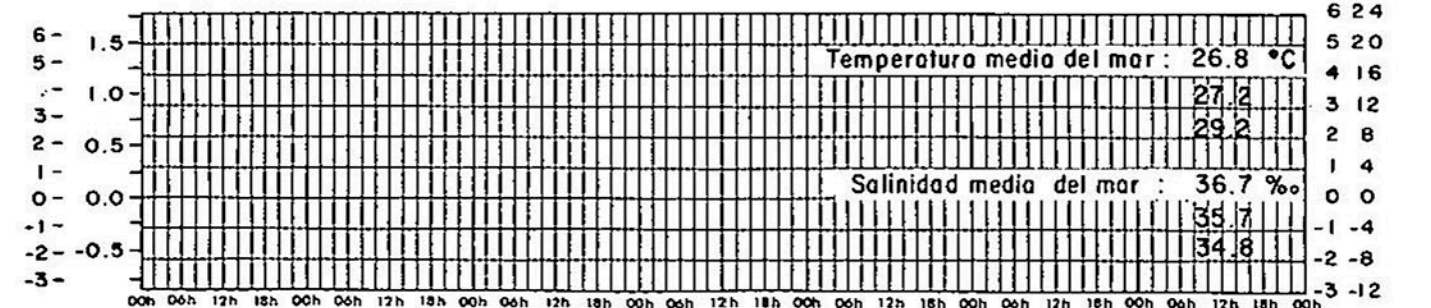
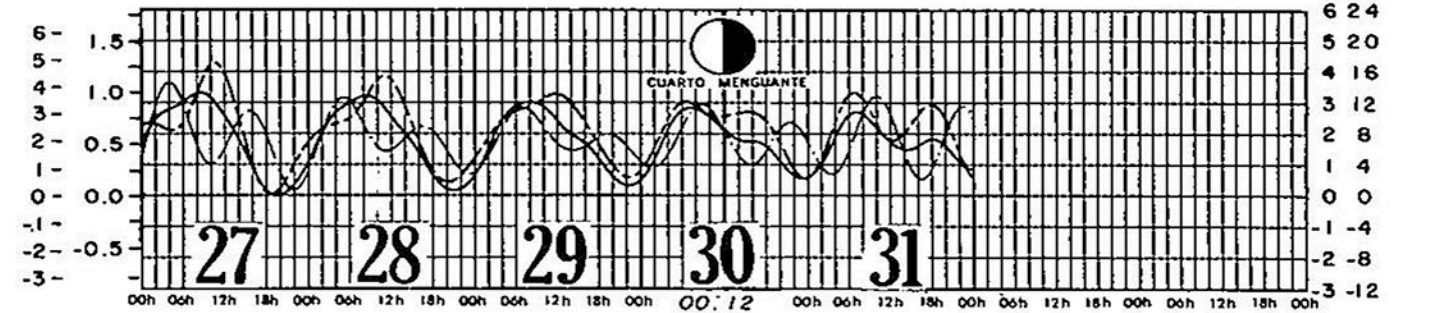
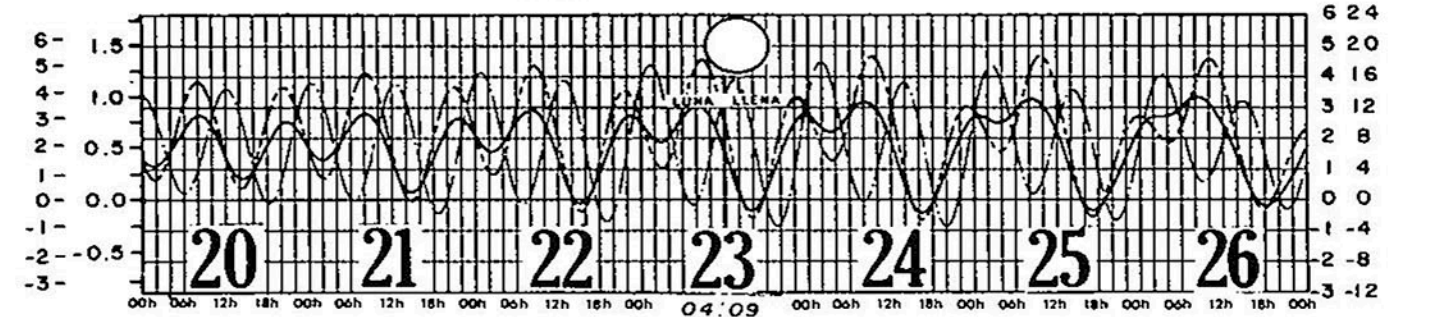
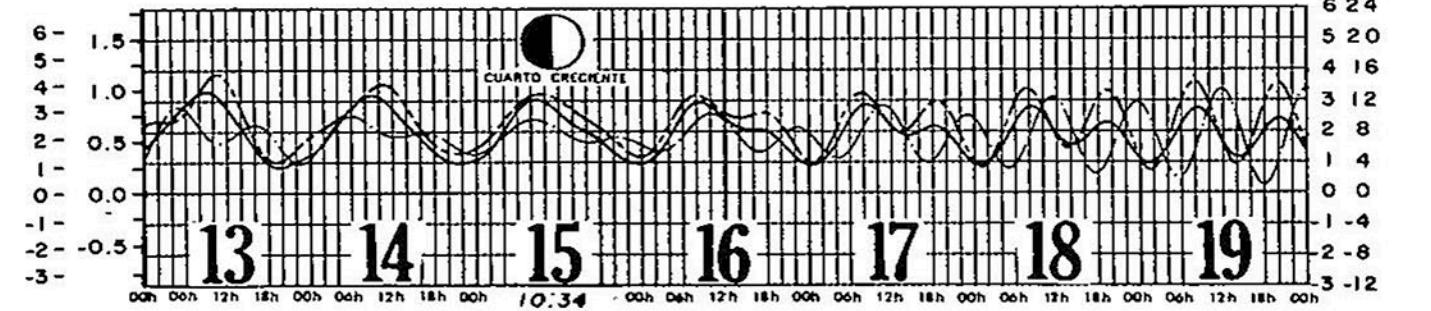
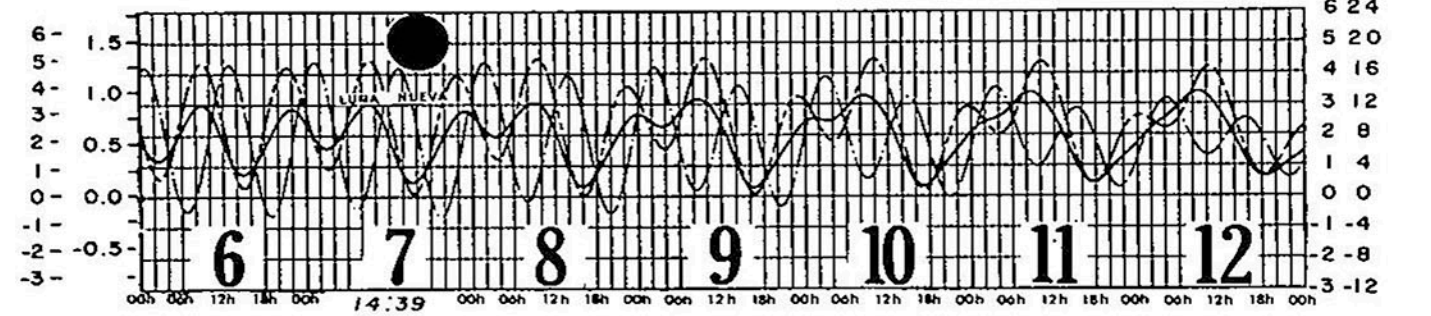
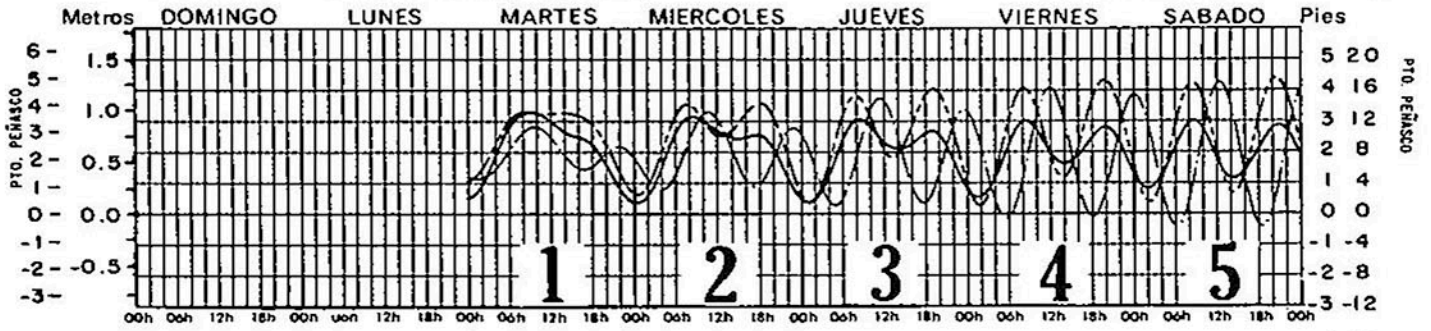




# OCTUBRE 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



HORA DEL MERIDIANO 105° W

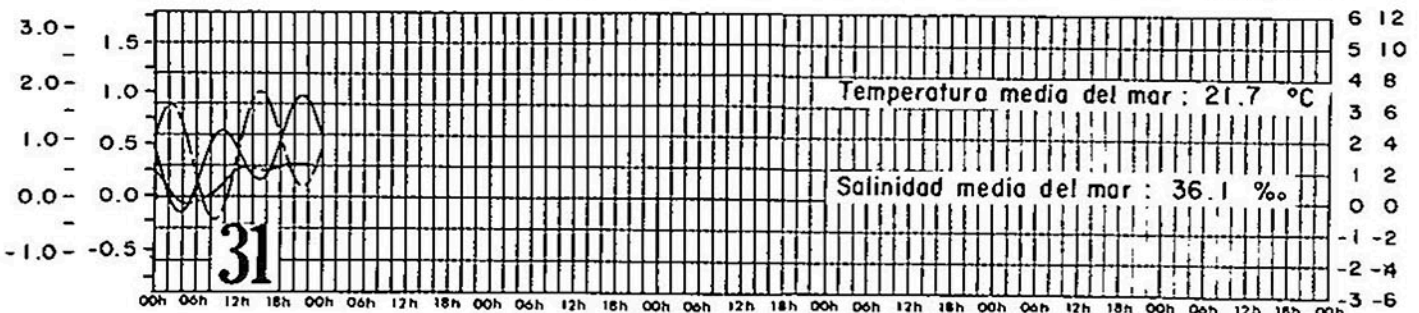
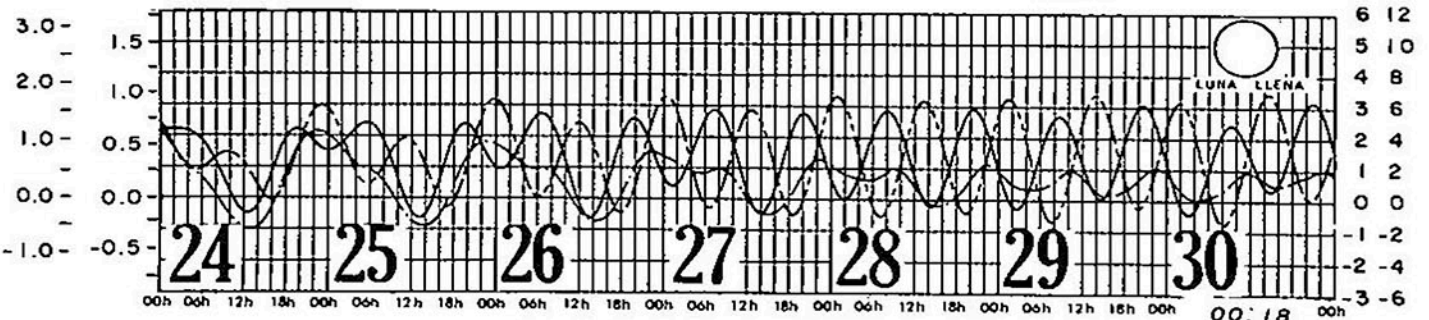
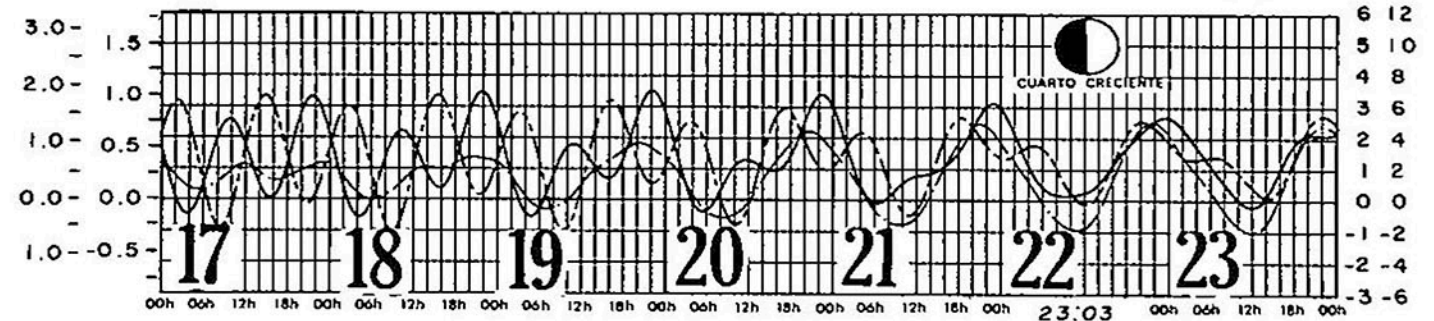
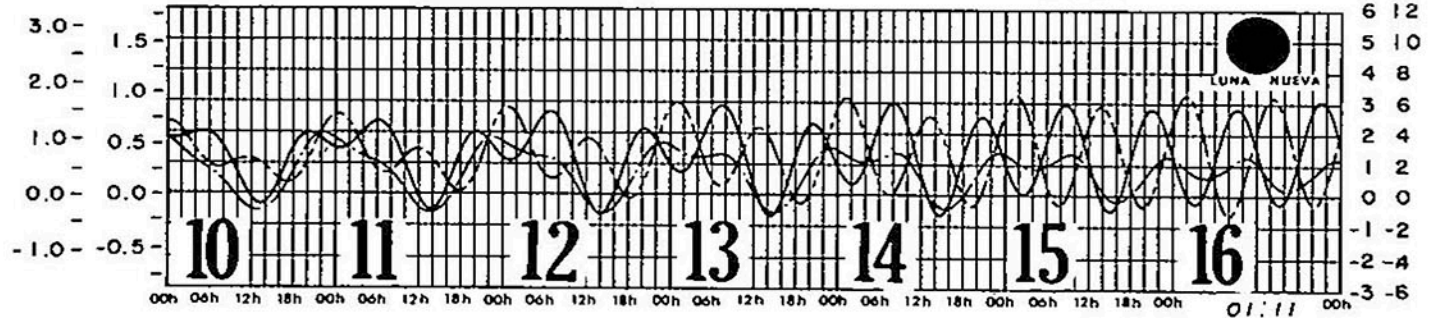
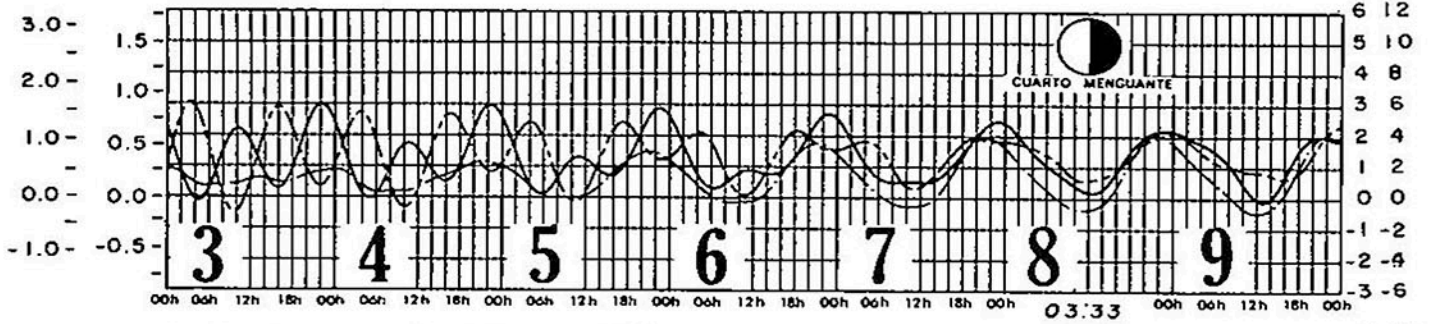
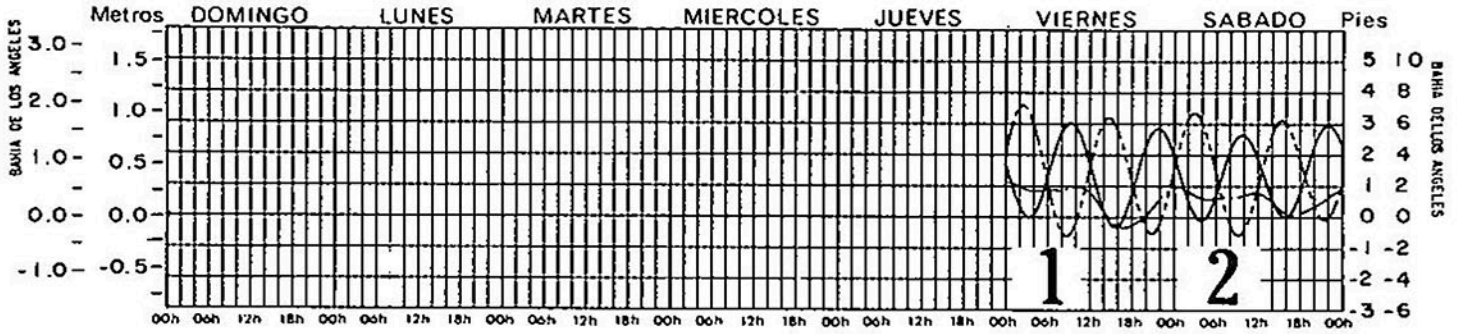
PLANO DE REFERENCIA: N.B.M.I.



# MARZO 1991

B. DE LOS ANGELES, B.C.S.  
STA. ROSALIA, B.C.S.  
LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



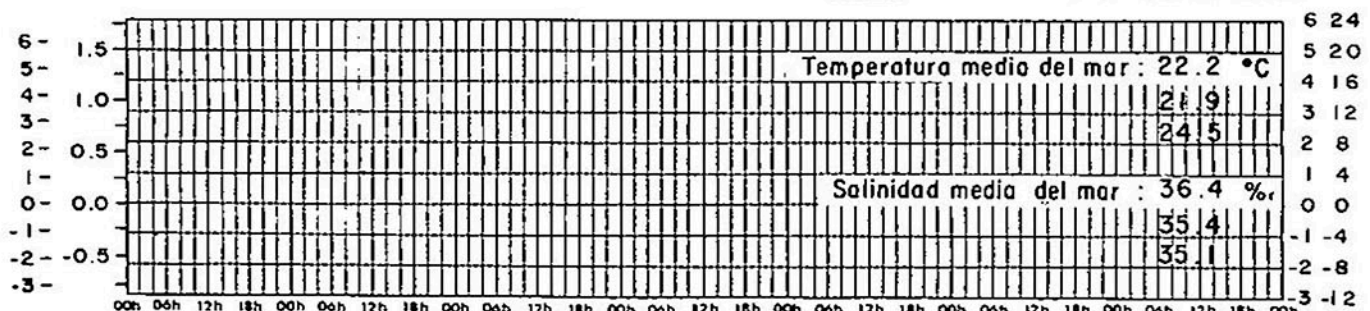
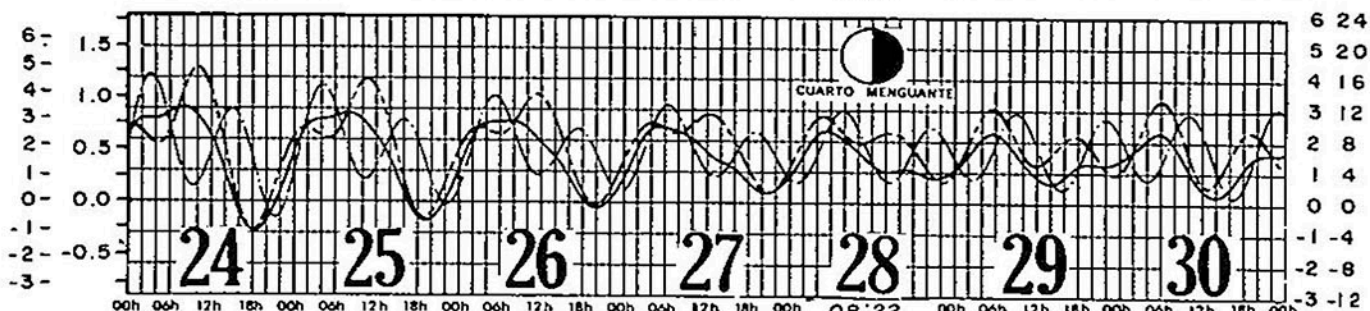
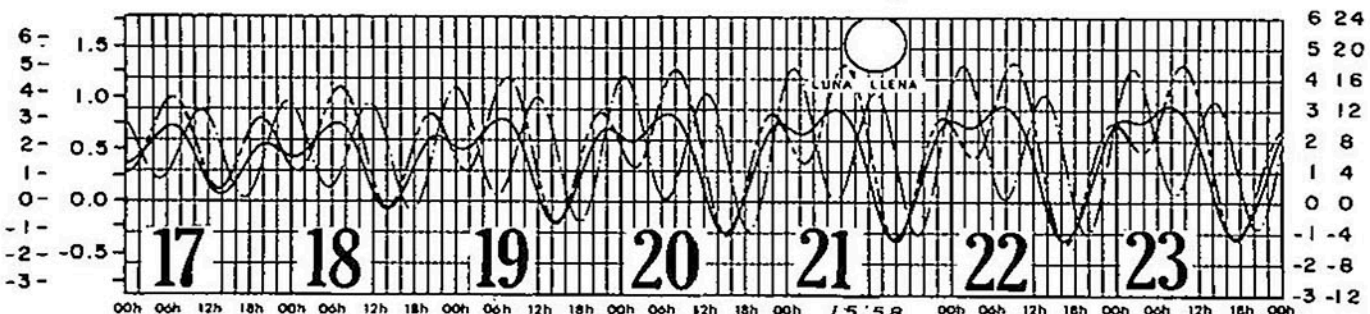
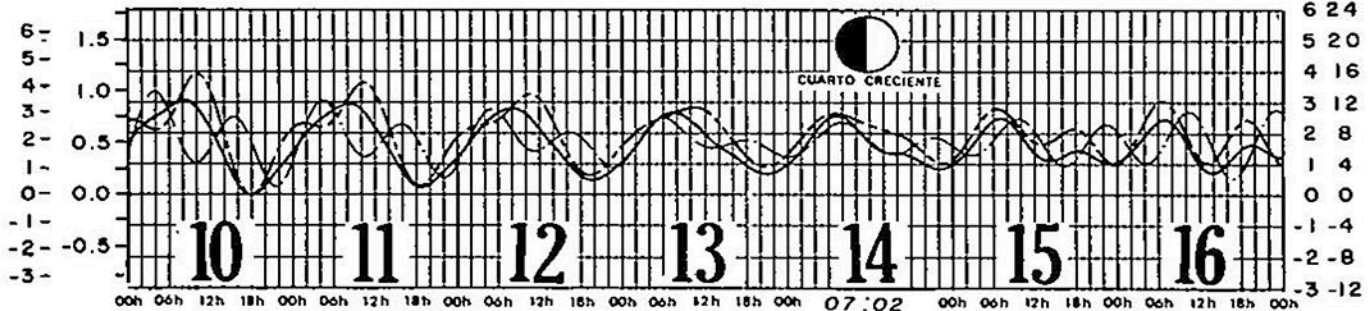
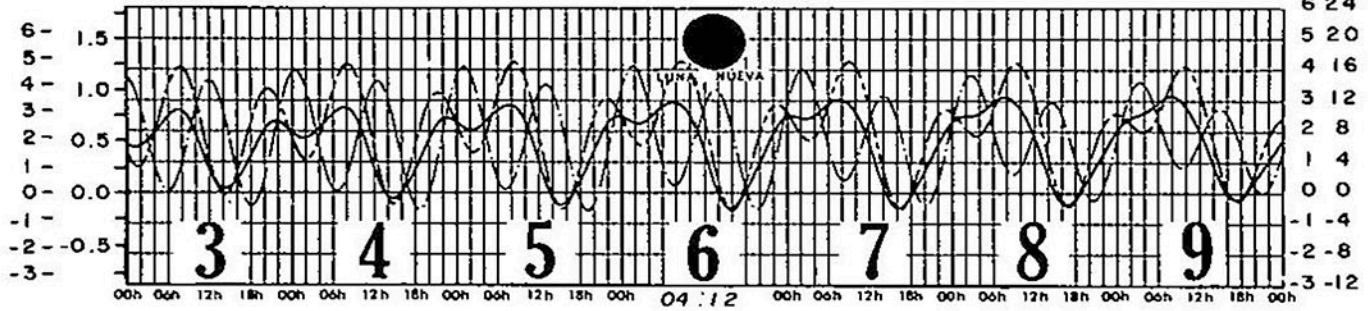
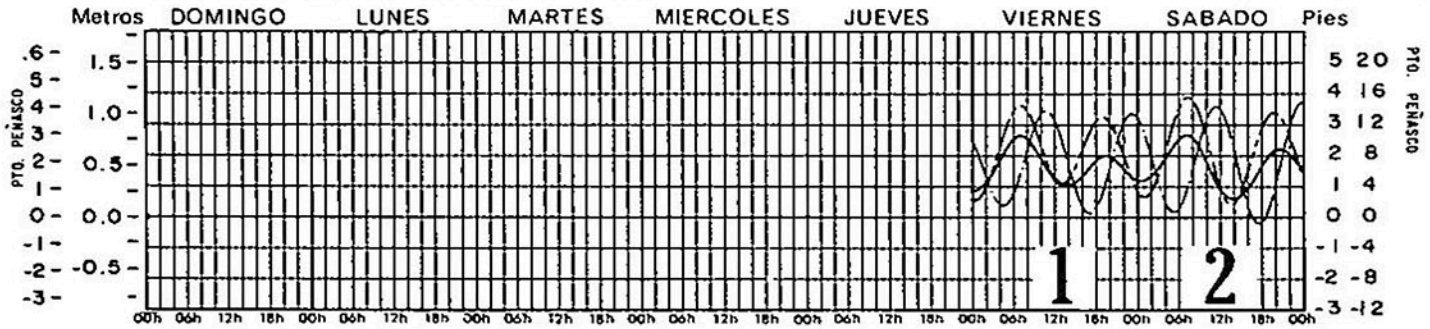


# NOVIEMBRE 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

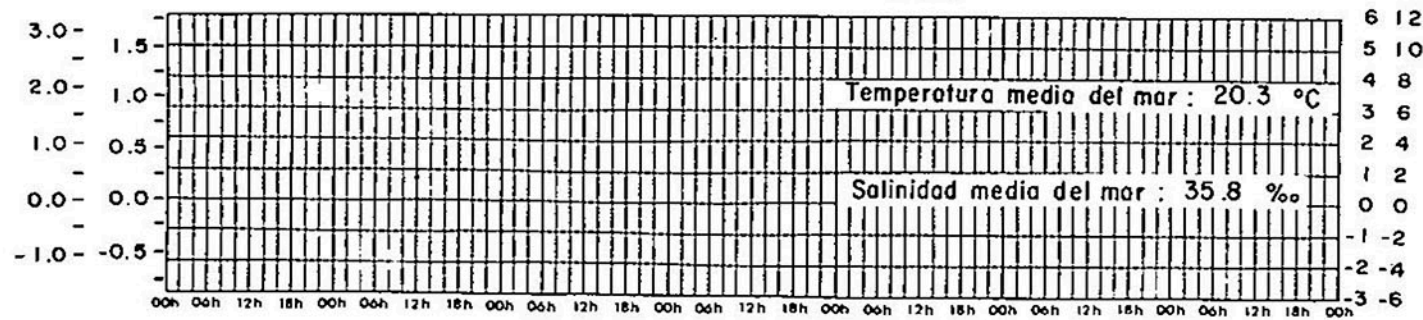
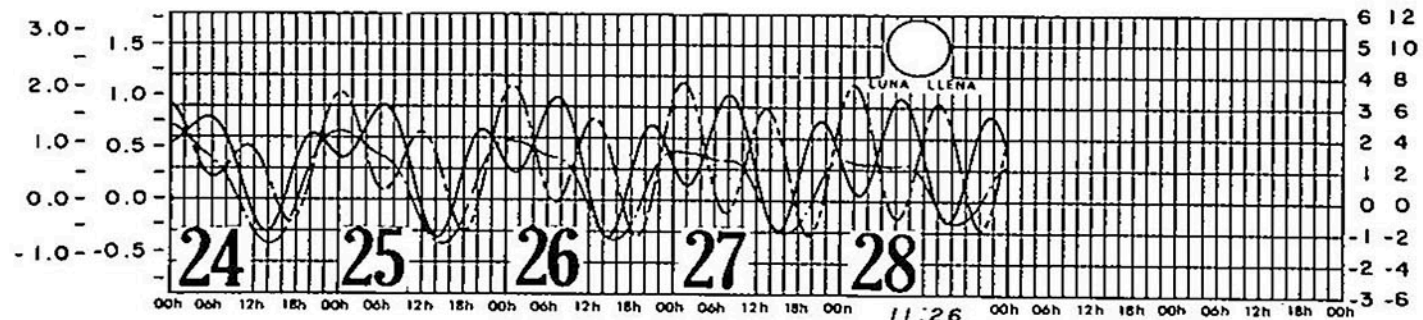
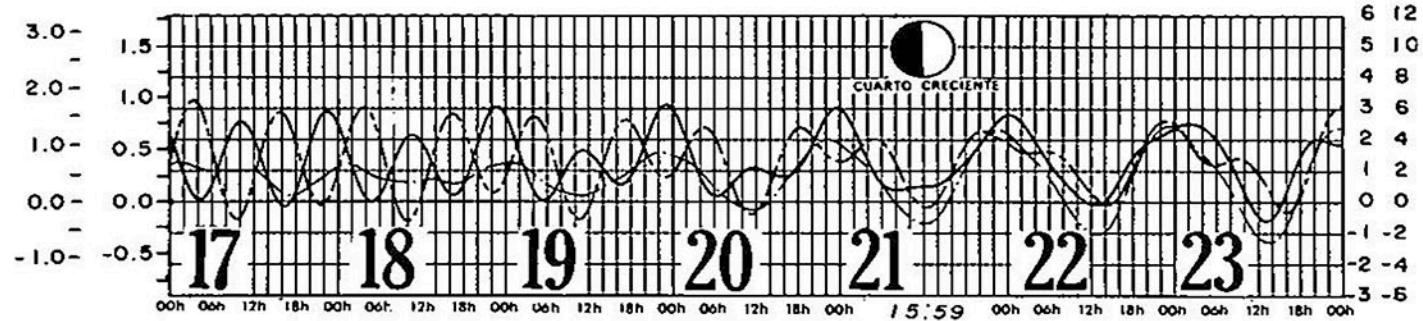
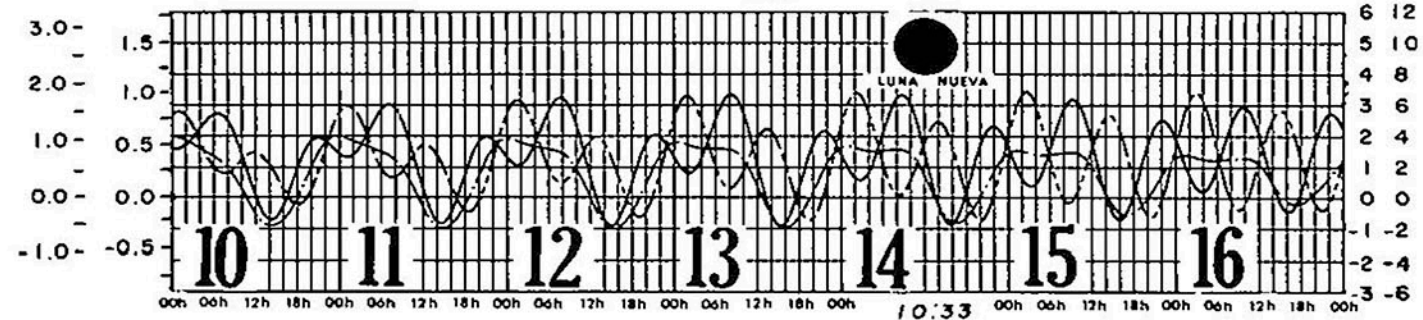
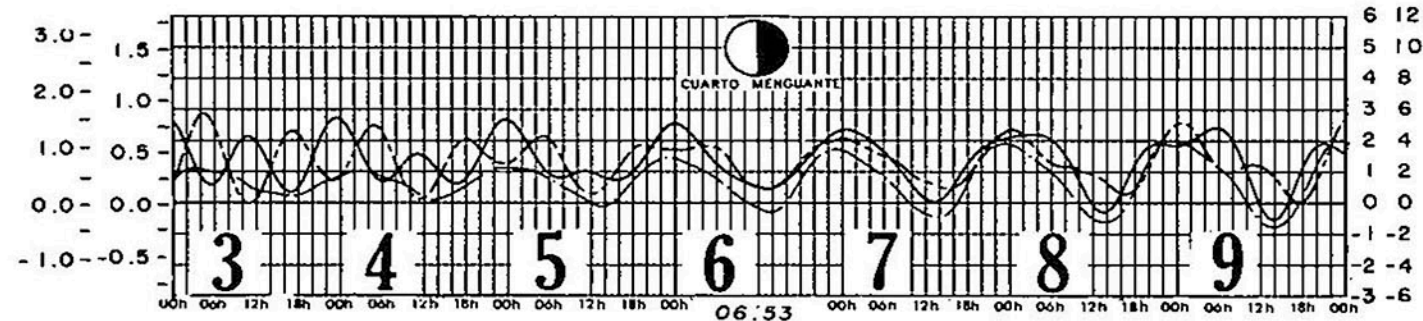
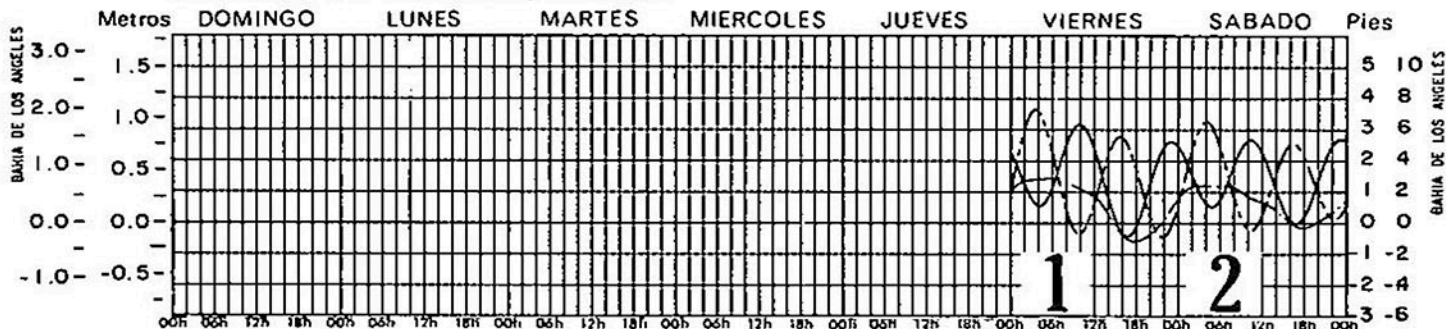
PLANO DE REFERENCIA: N.B.M.I.



# FEBRERO 1991

B. DE LOS ANGELES, B.C.S.  
STA. ROSALIA, B.C.S.  
LA PAZ, B.C.S.

INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



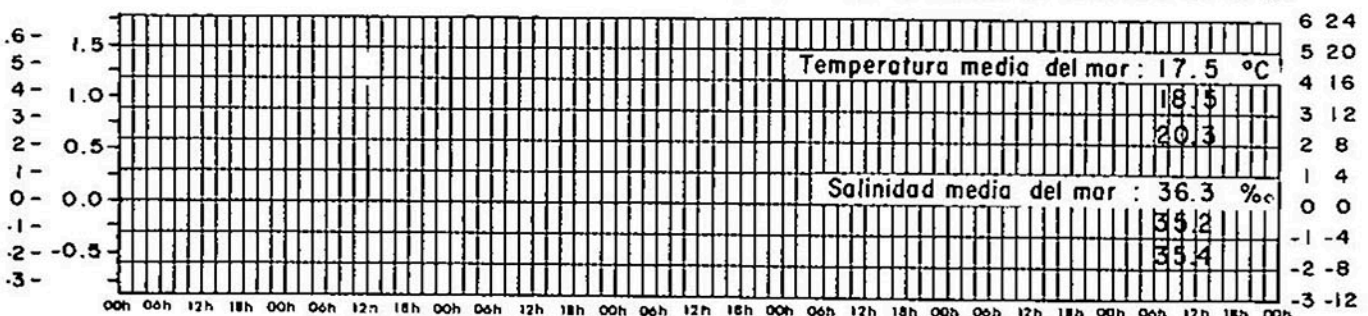
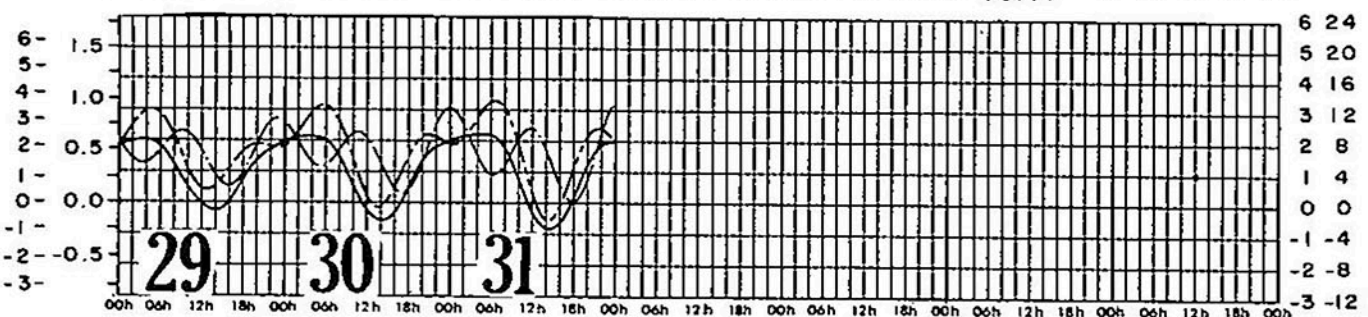
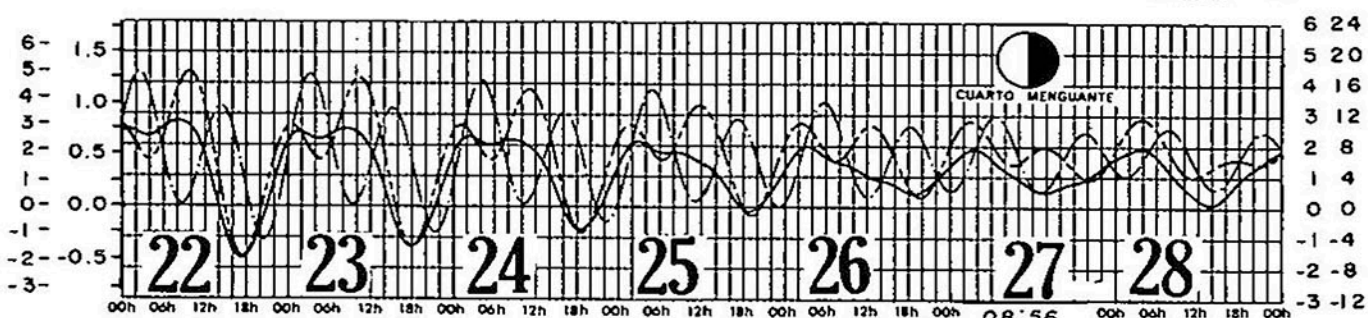
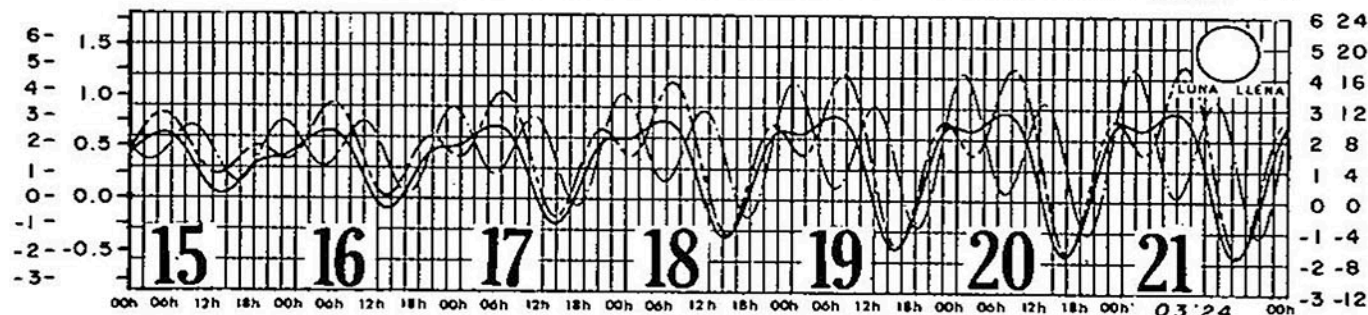
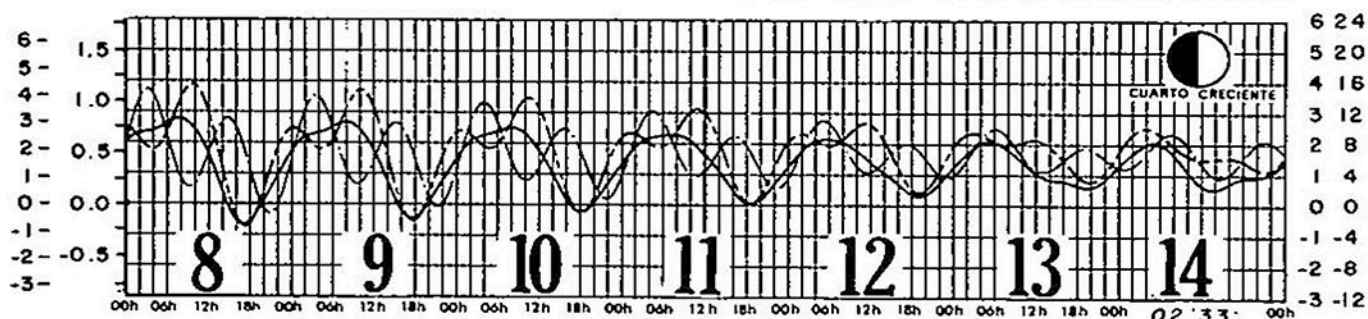
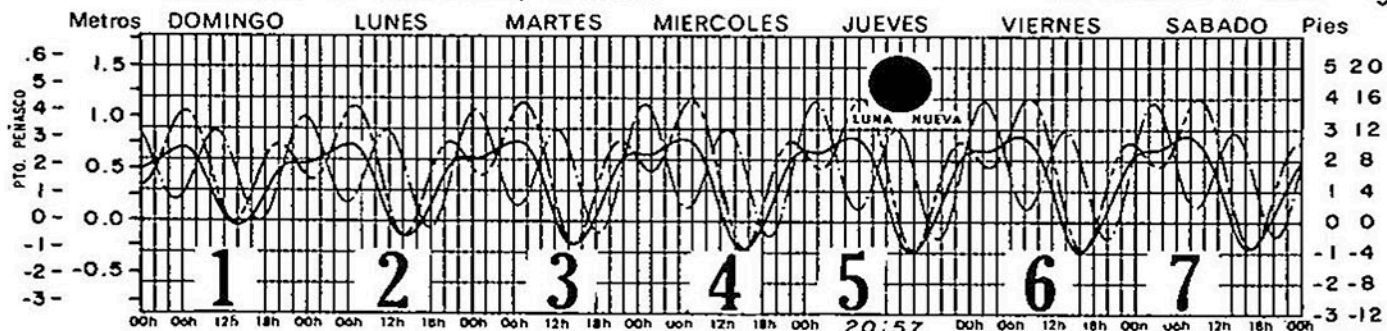


# DICIEMBRE 1991

PTO. PEÑASCO, SON.  
GUAYMAS, SON.  
TOPOLOBAMPO, SIN.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA: N.B.M.I.



# ENERO 1991

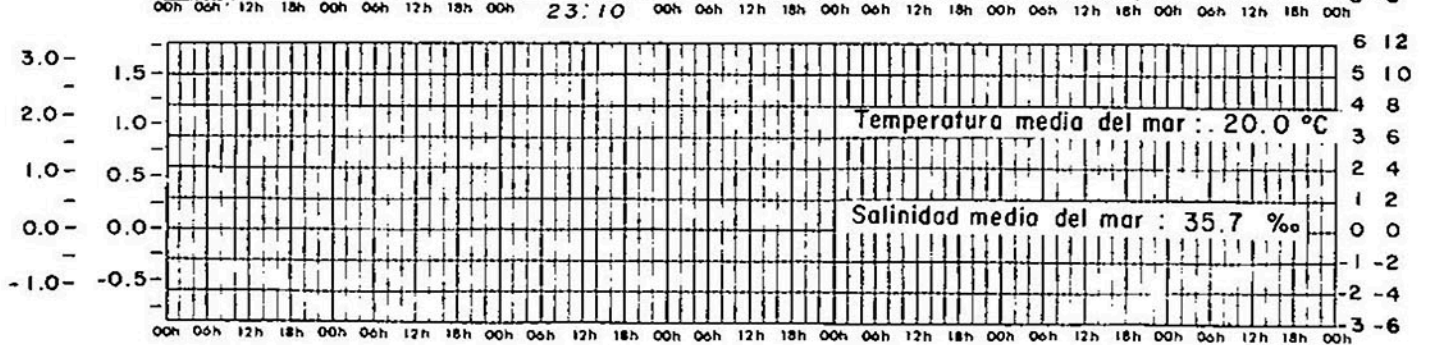
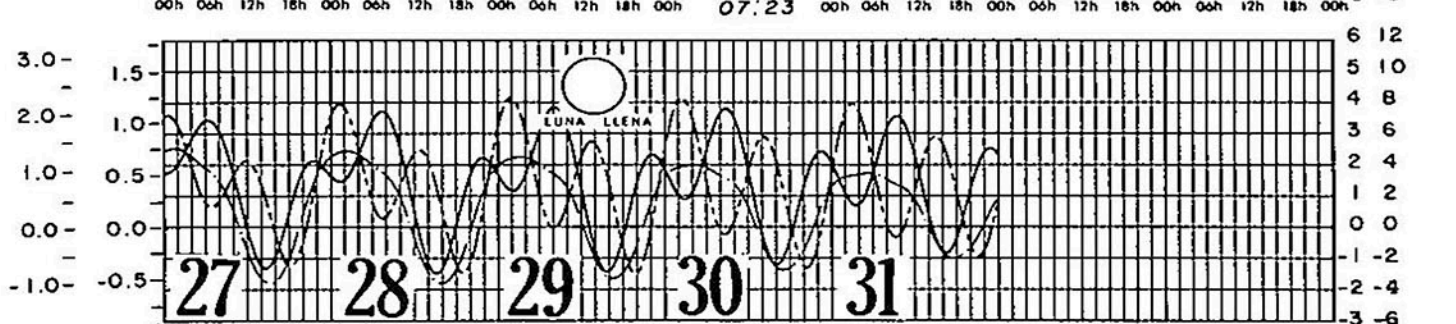
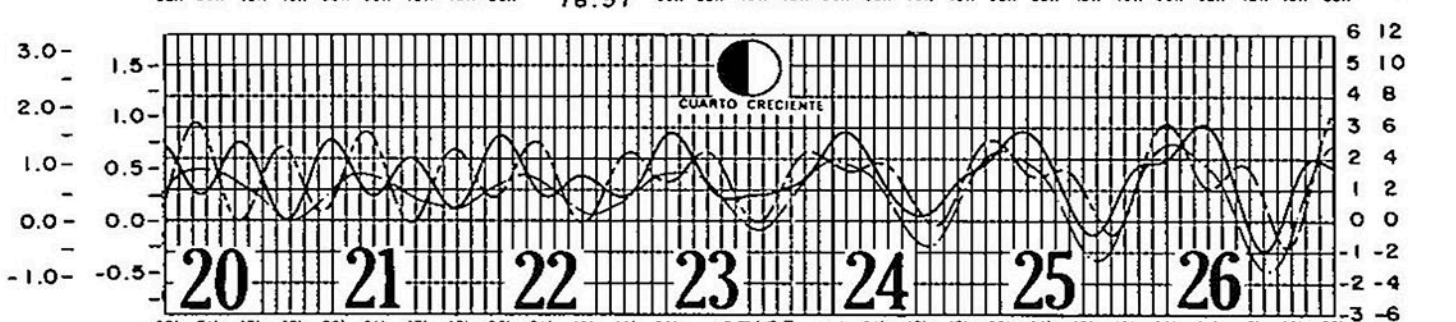
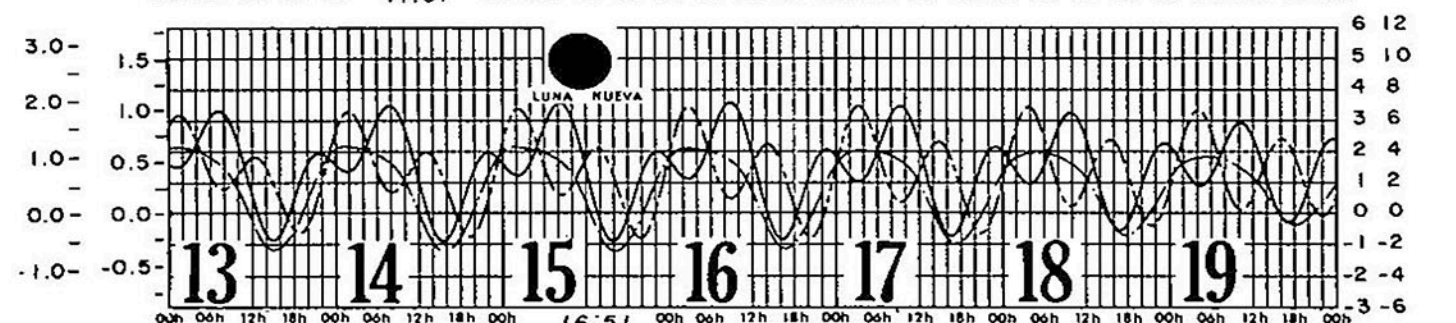
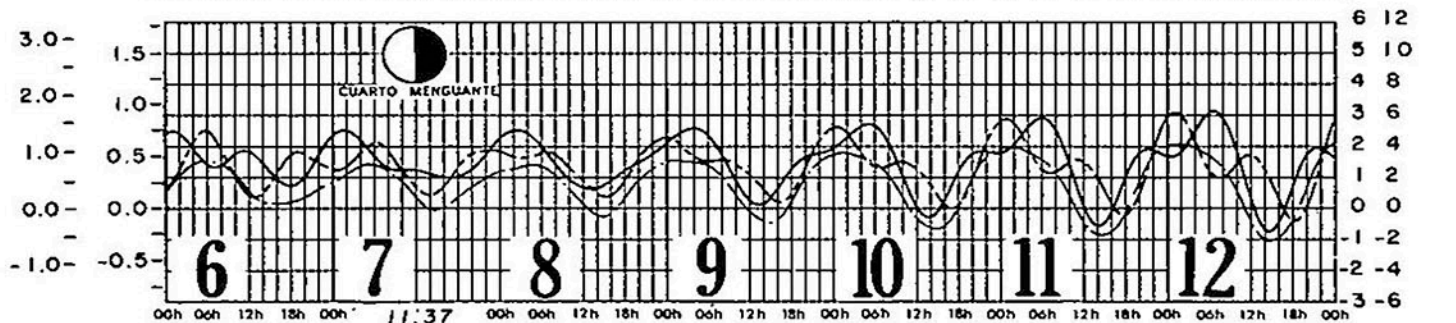
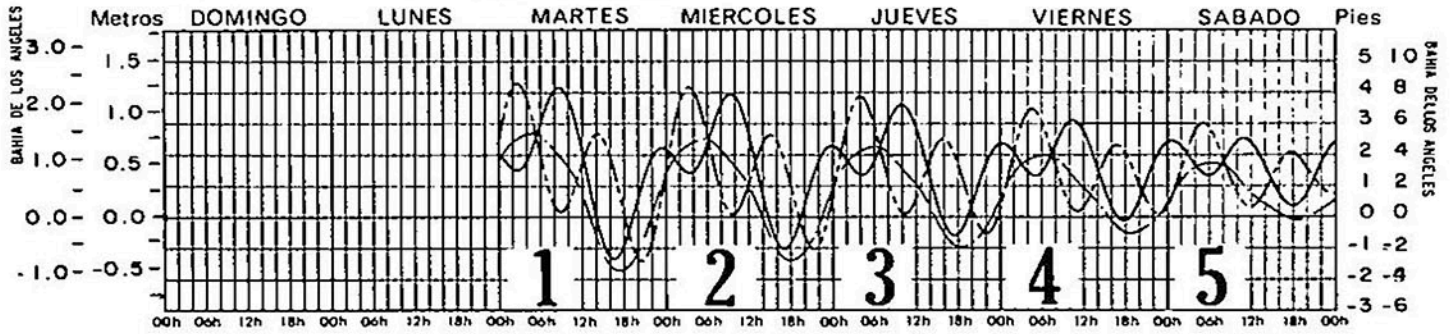
B. DE LOS ANGELES, B.C.S.

STA. ROSALIA, B.C.S.

LA PAZ, B.C.S.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 105° W

PLANO DE REFERENCIA N.B.M.I.



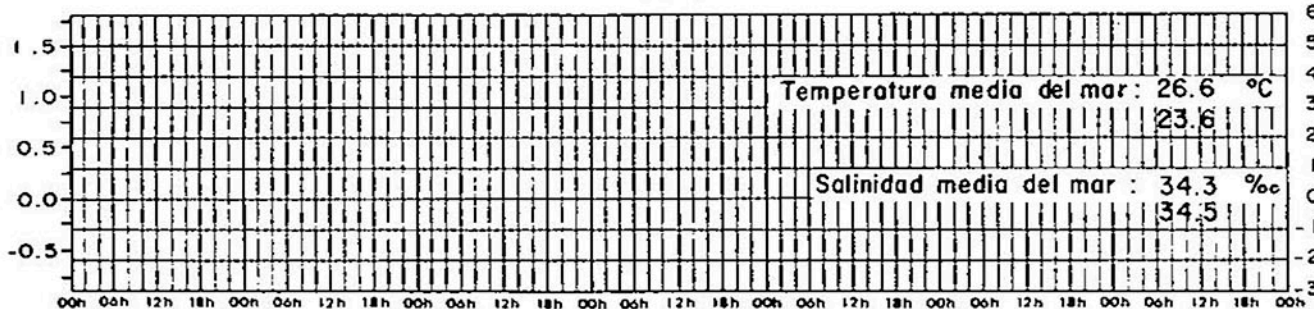
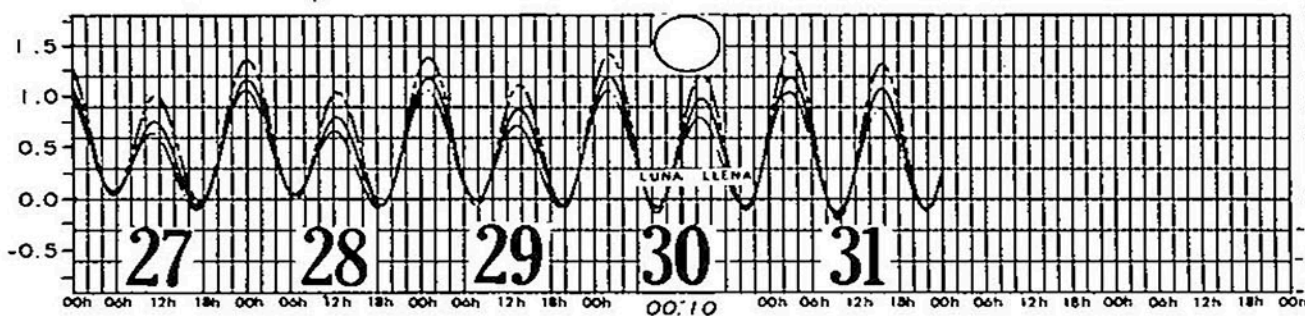
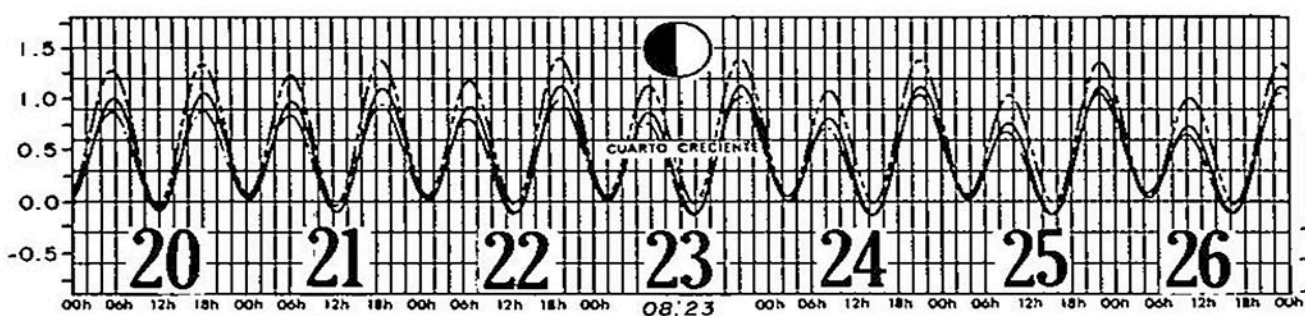
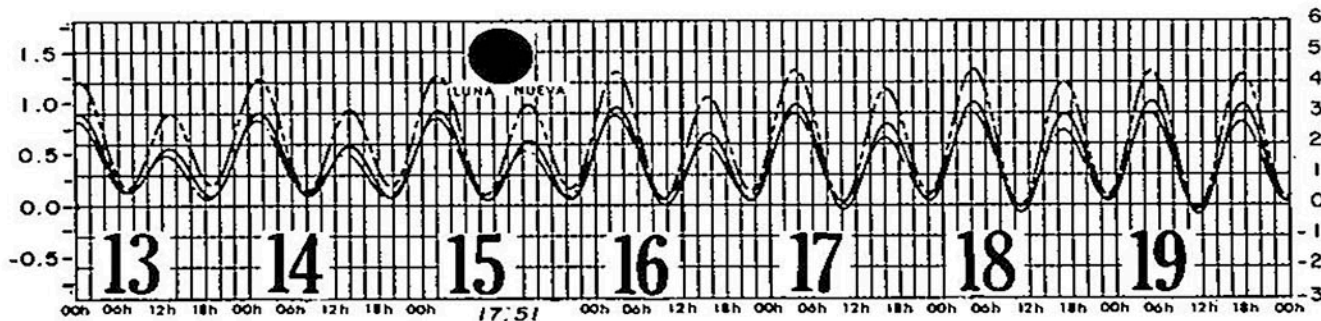
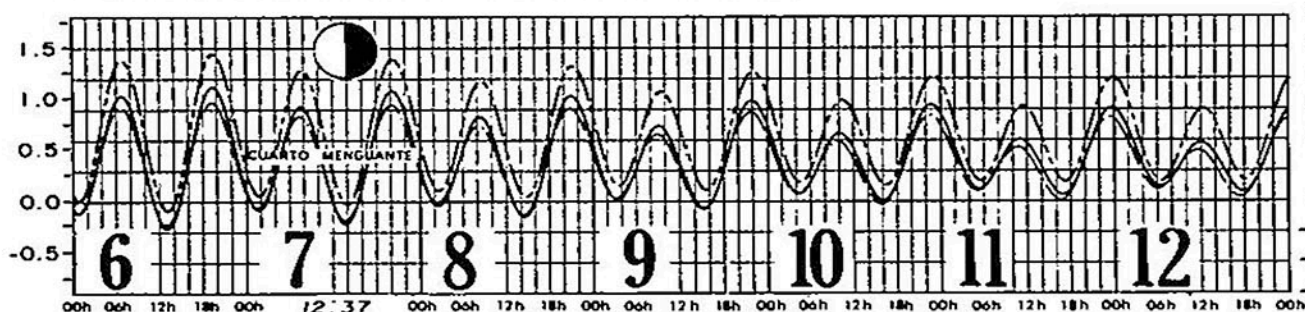
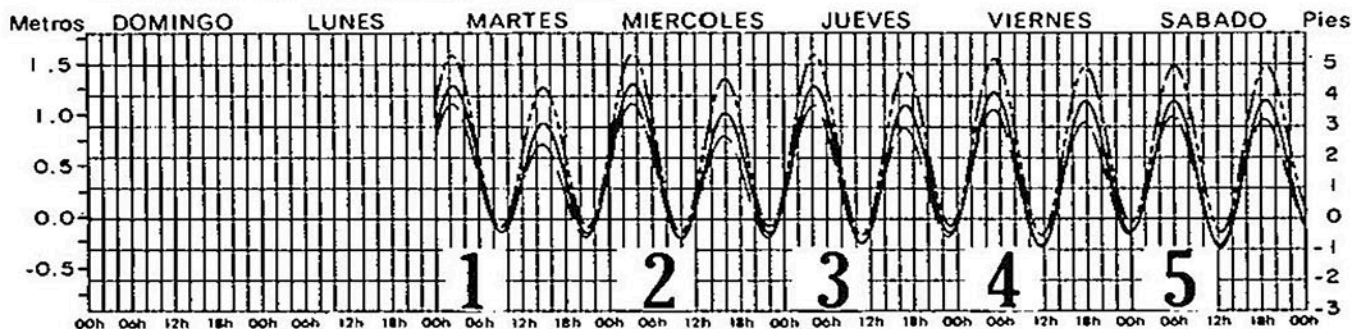


# ENERO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.



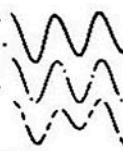
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

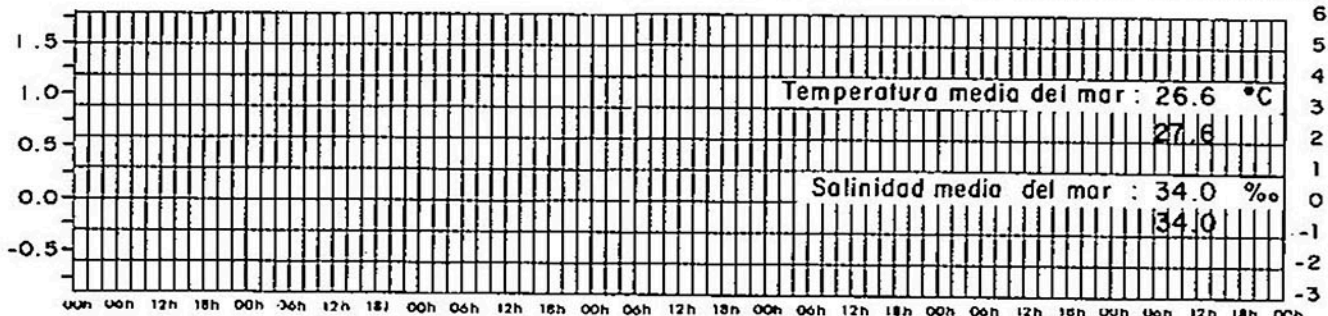
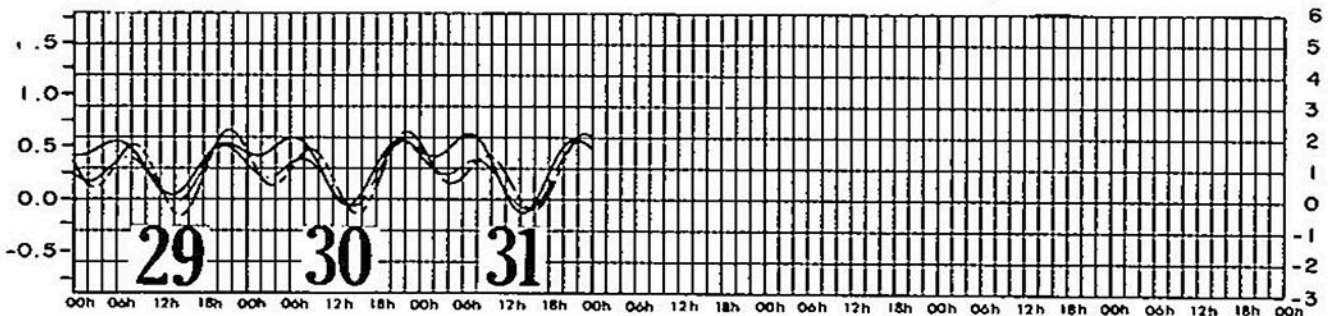
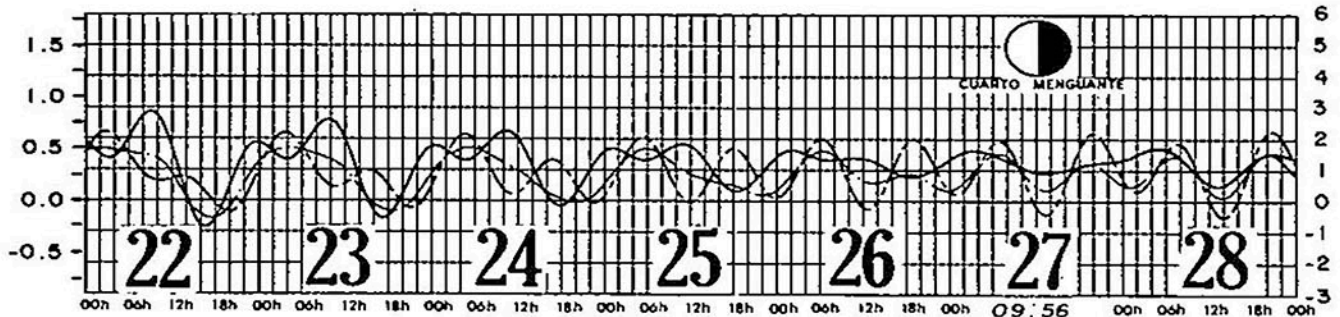
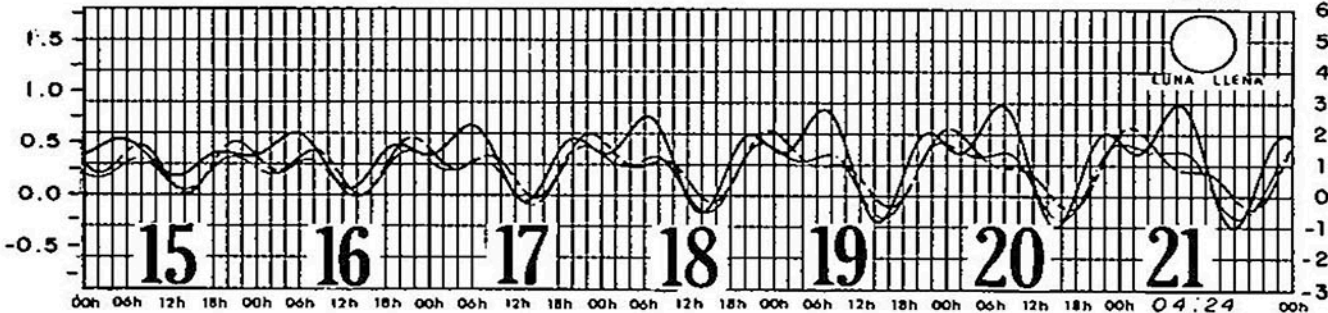
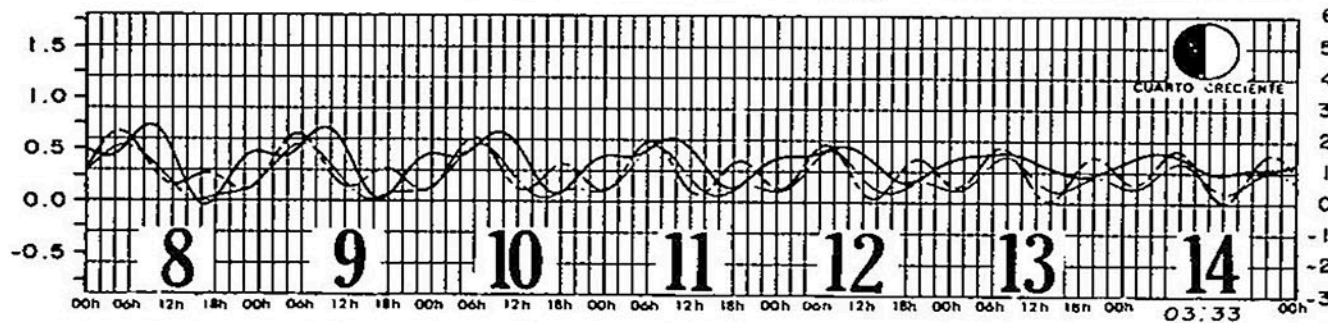
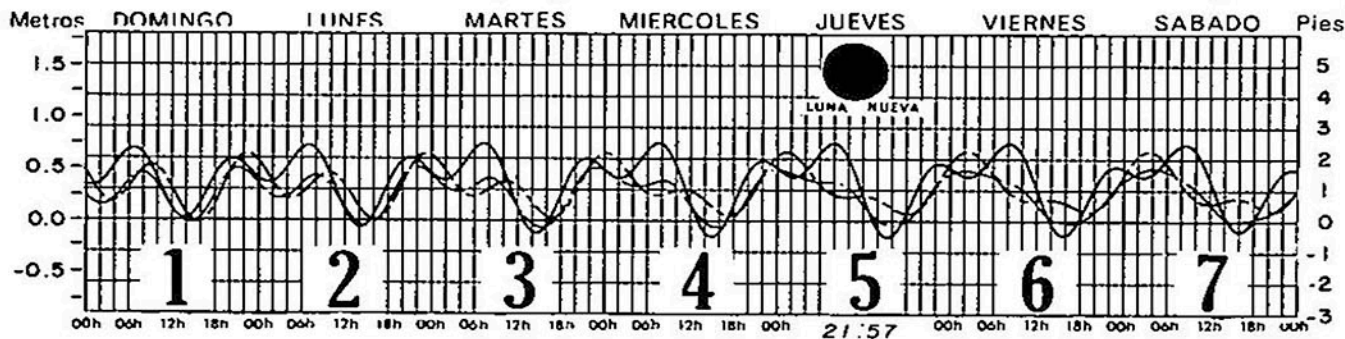


# DICIEMBRE 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA. U.N.A.M.







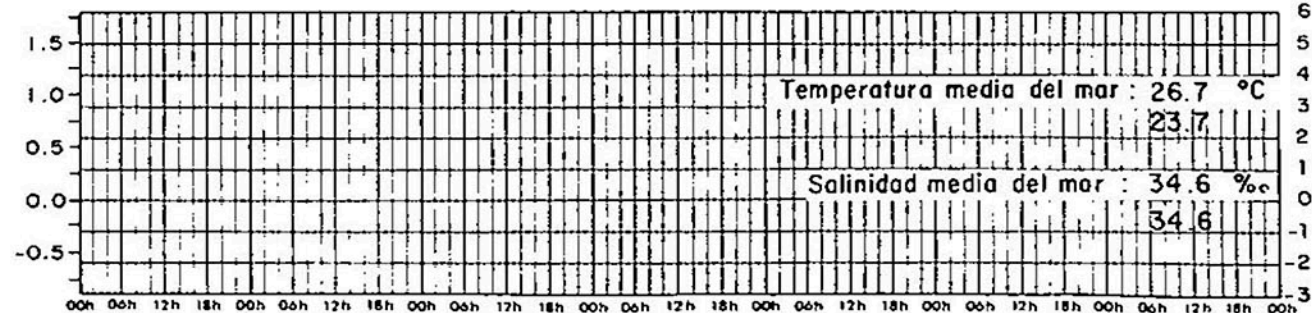
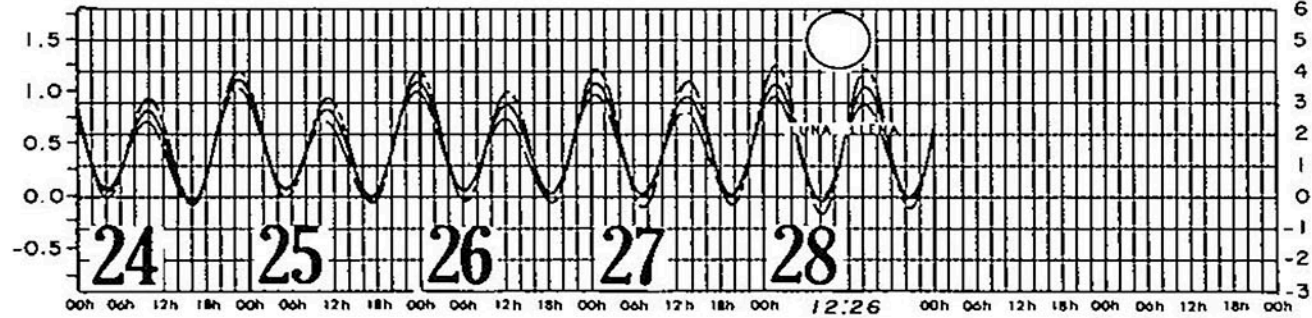
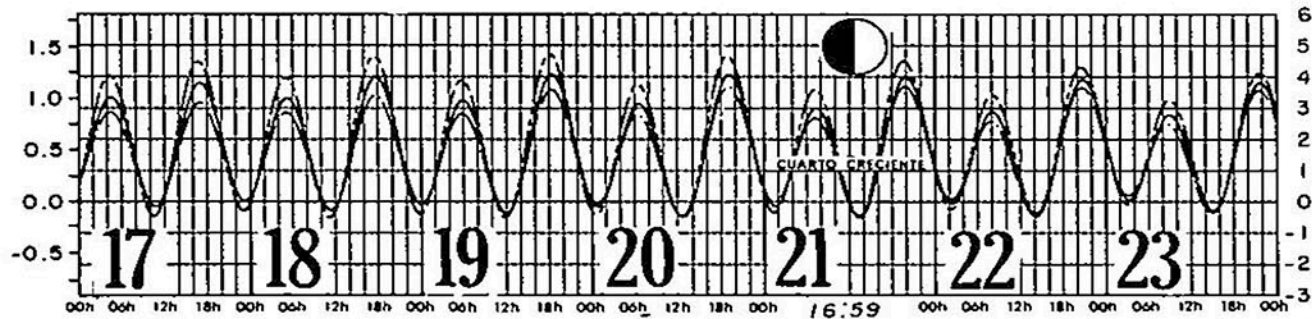
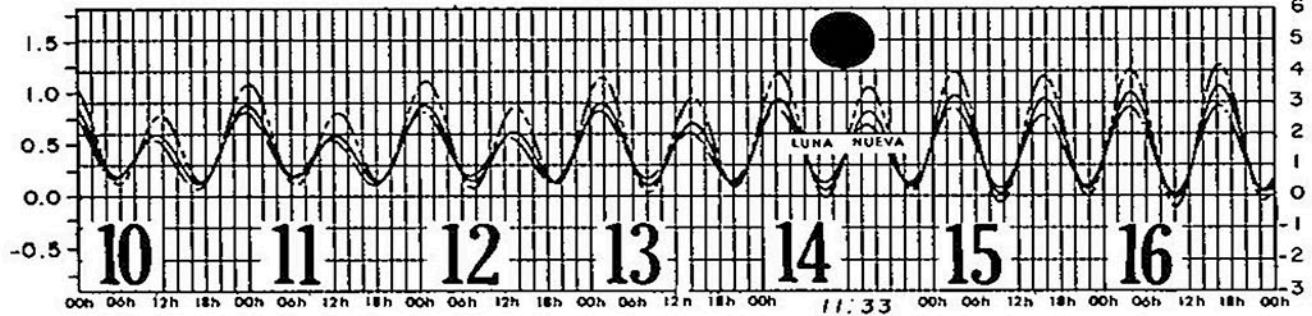
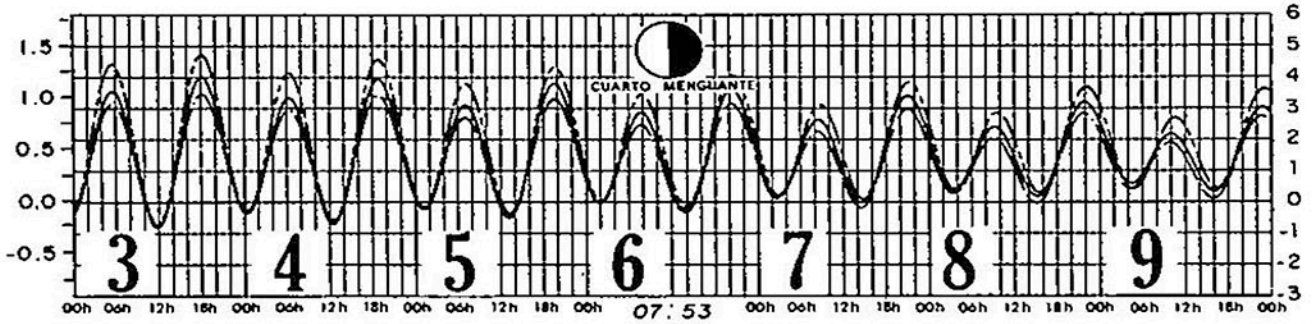
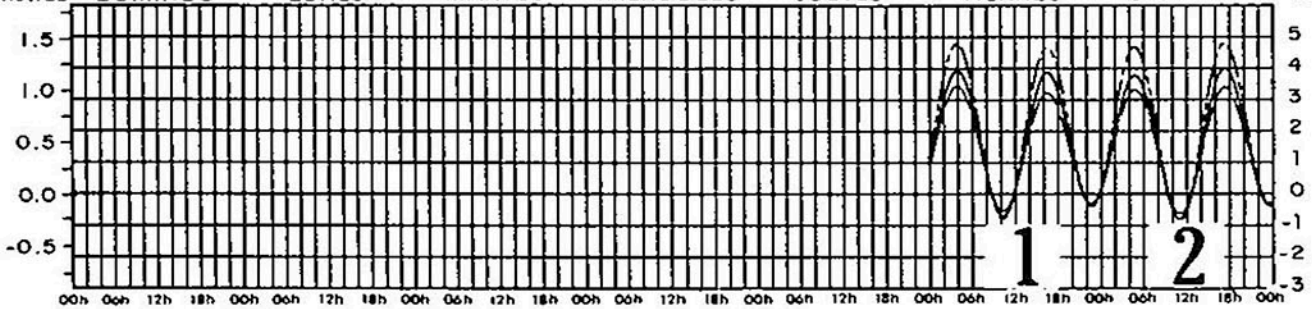
# FEBRERO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

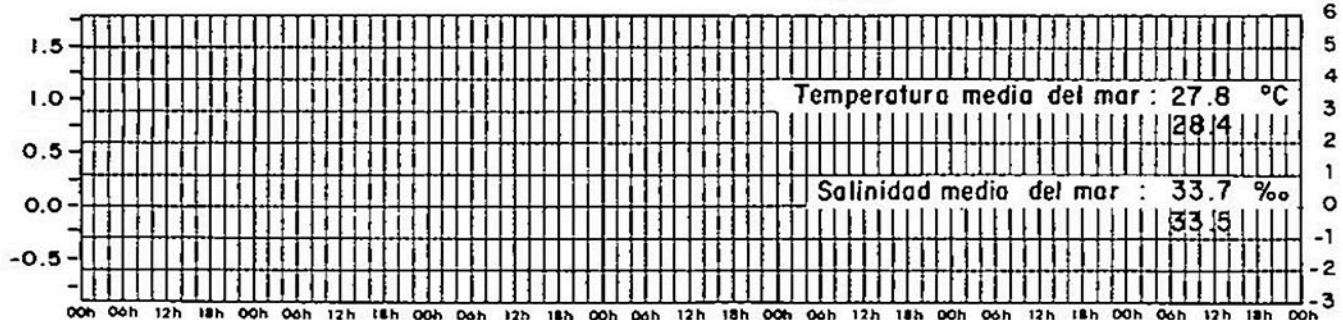
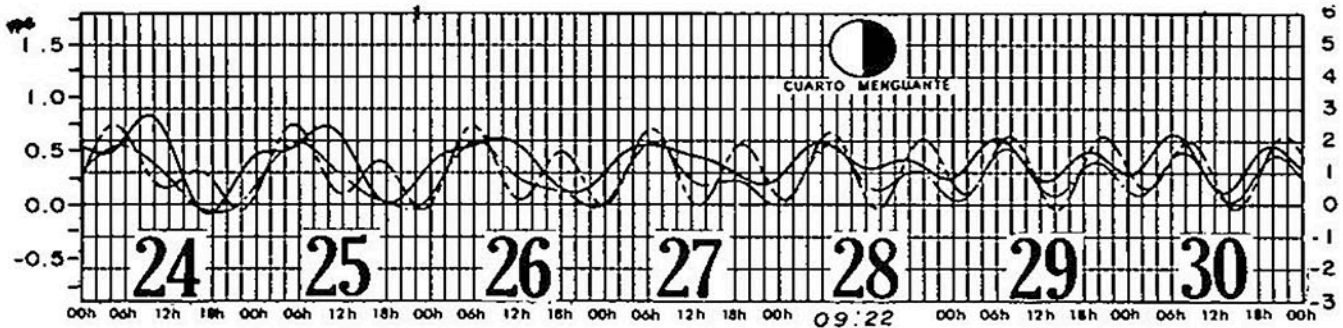
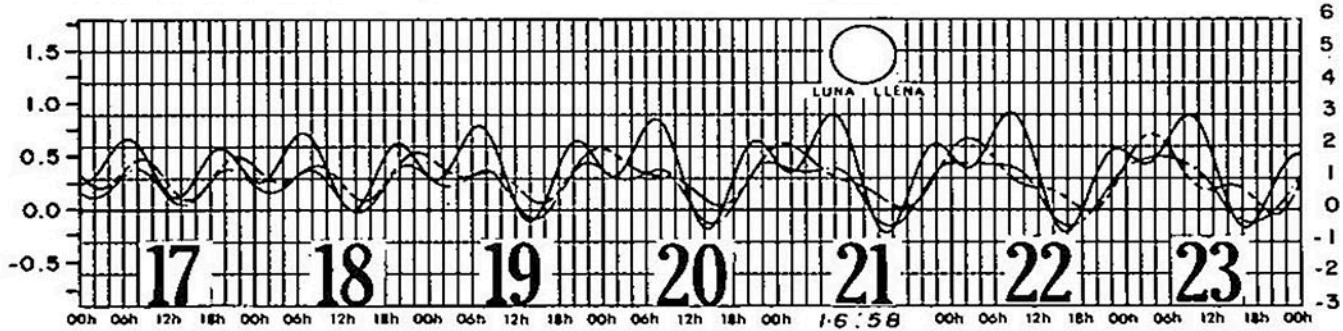
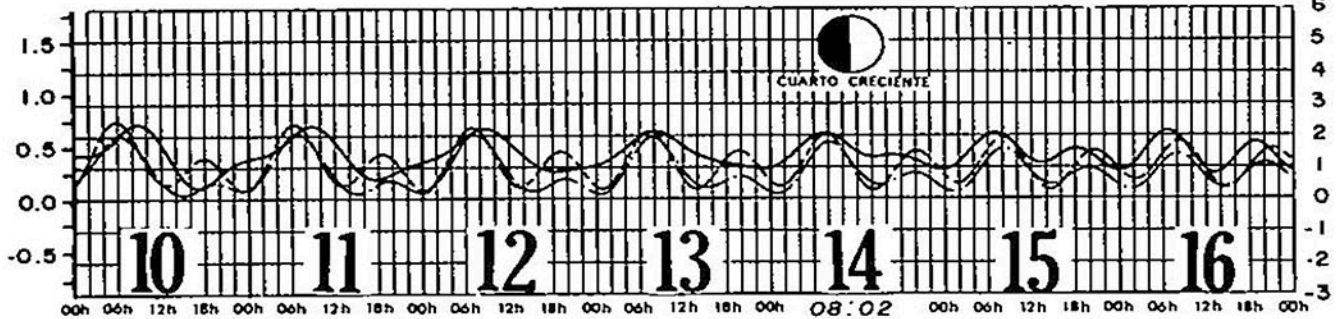
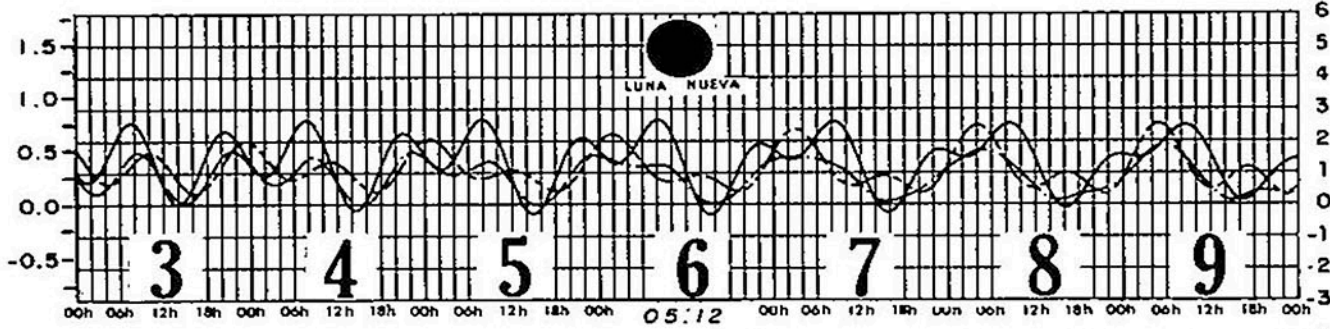
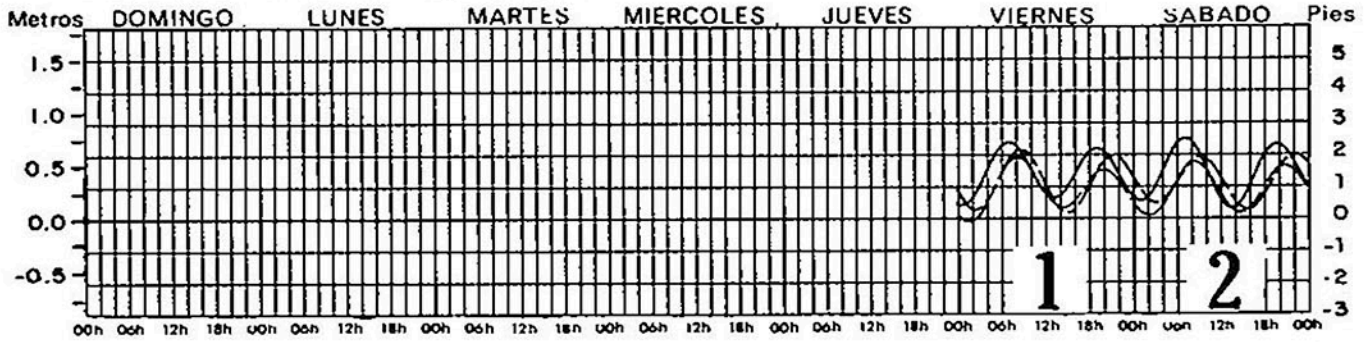


# NOVIEMBRE 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

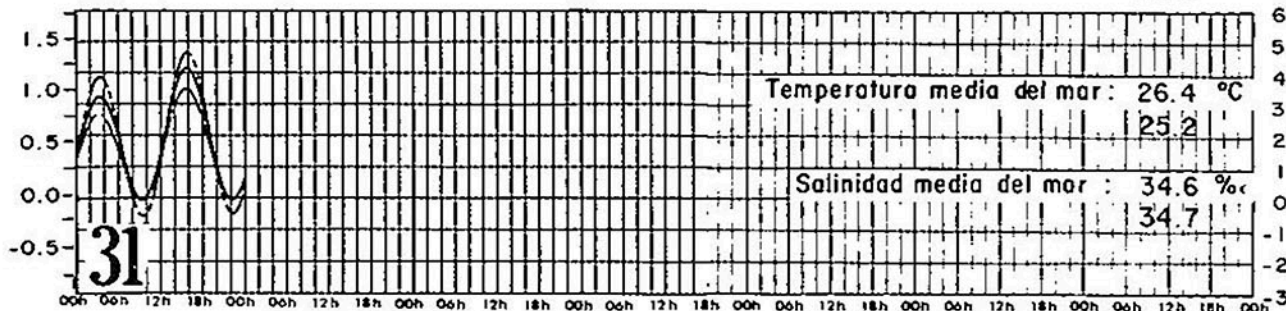
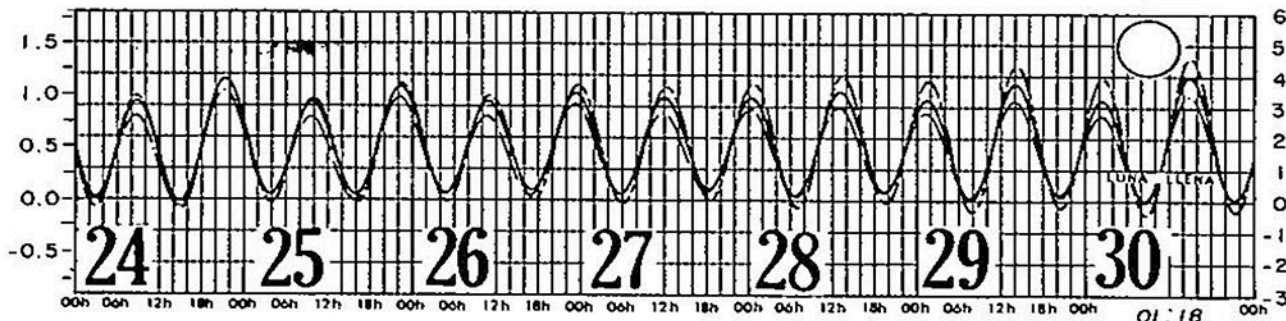
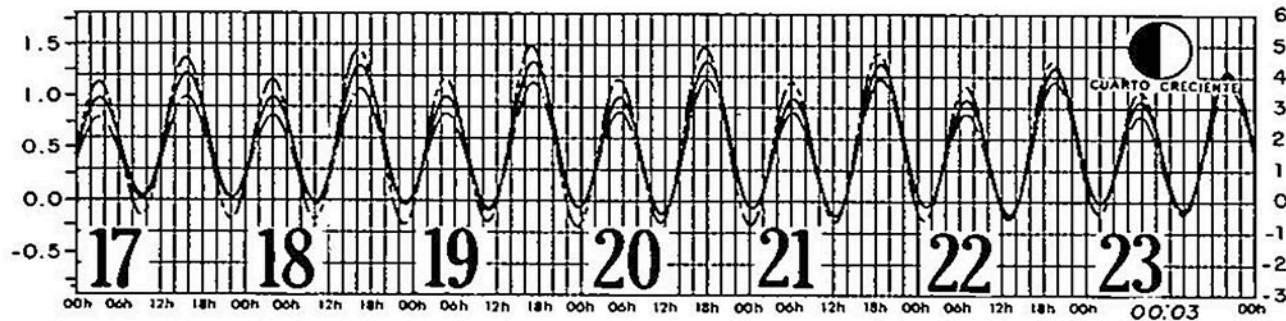
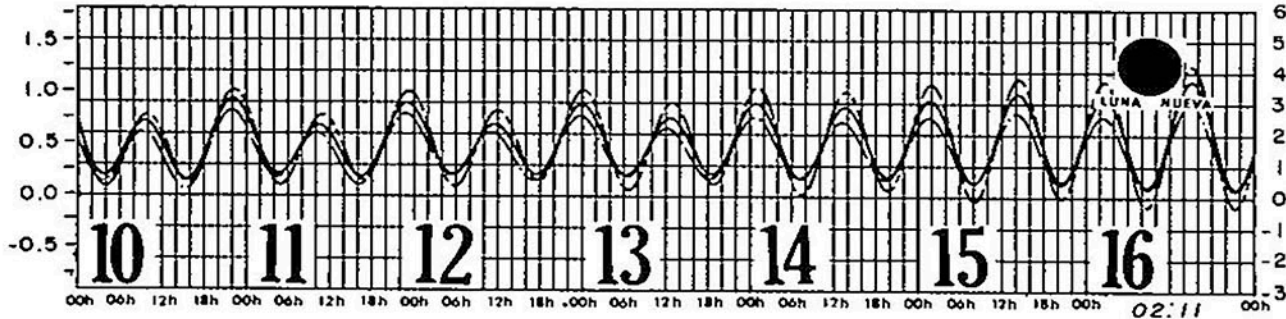
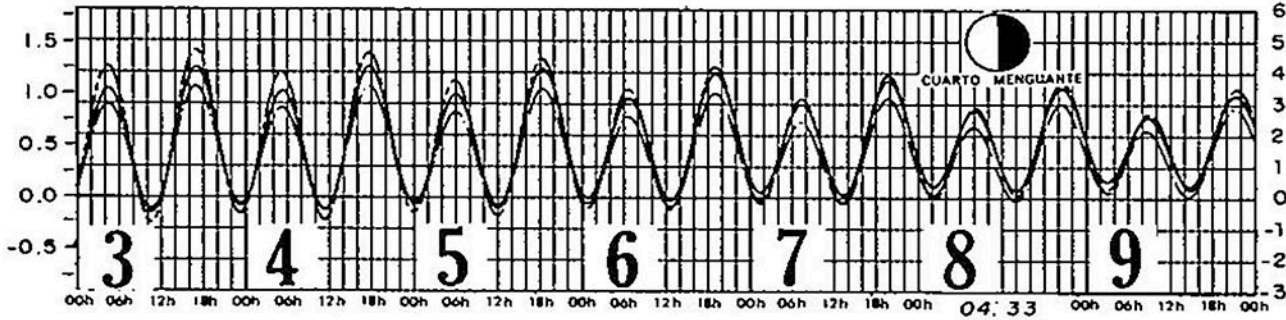
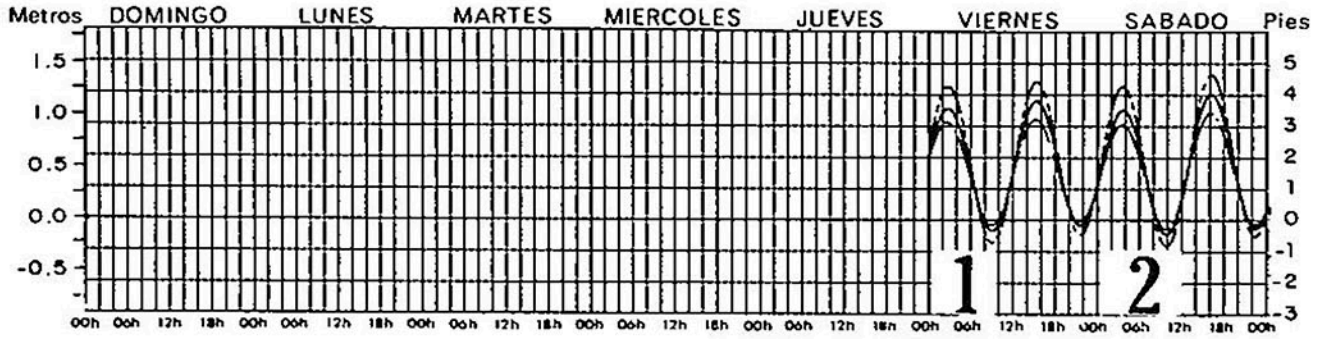




# MARZO 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



Temperatura media del mar : 26.4 °C

25.2

Salinidad media del mar : 34.6 ‰

34.7

HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

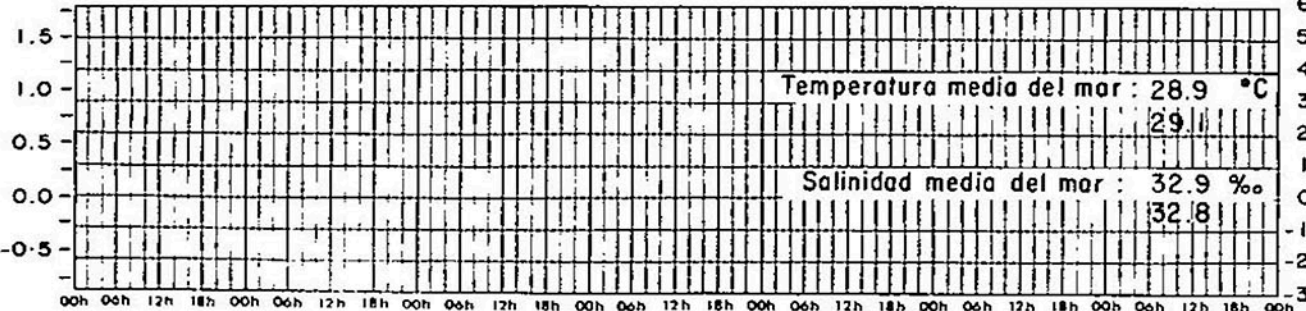
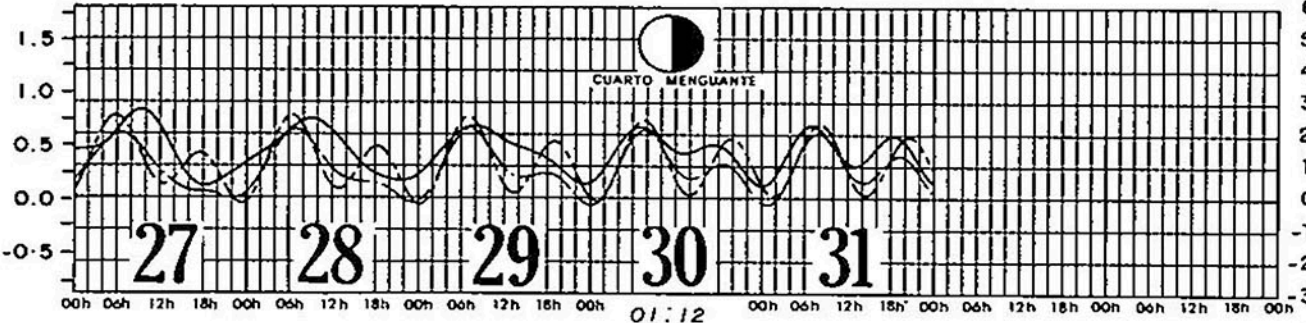
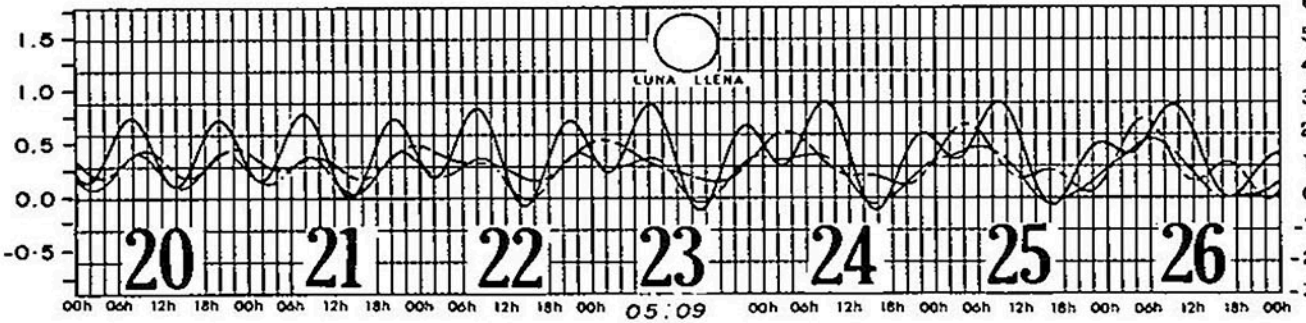
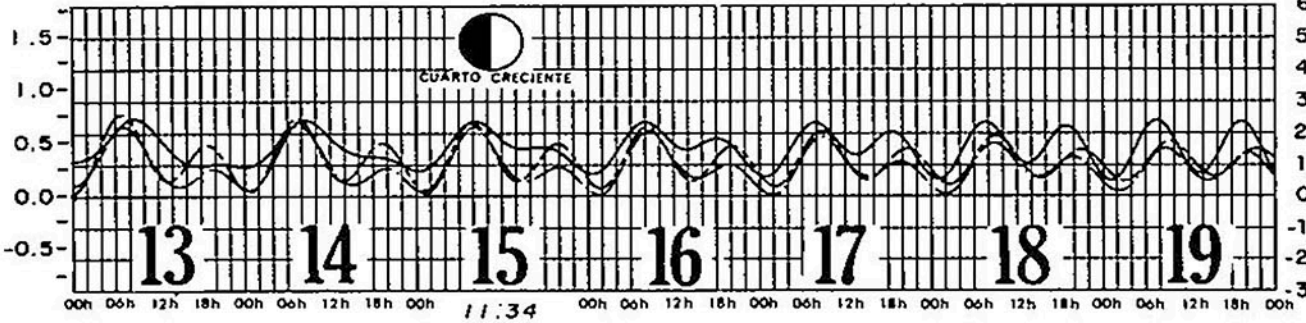
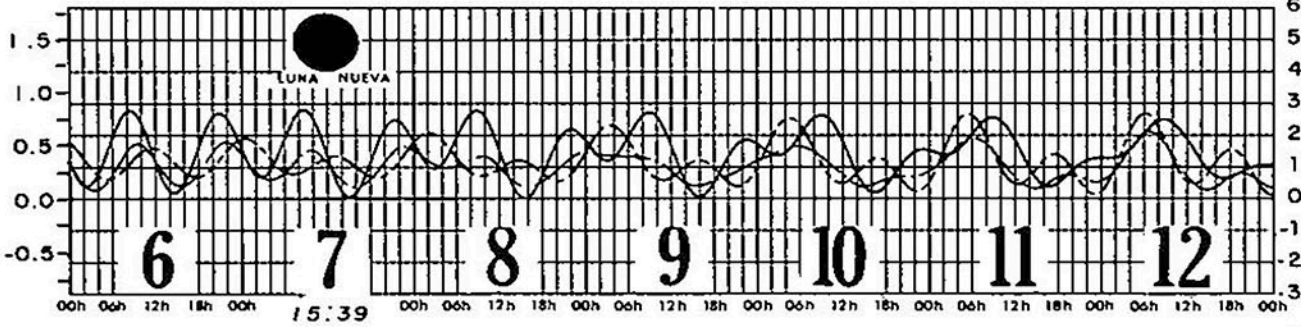
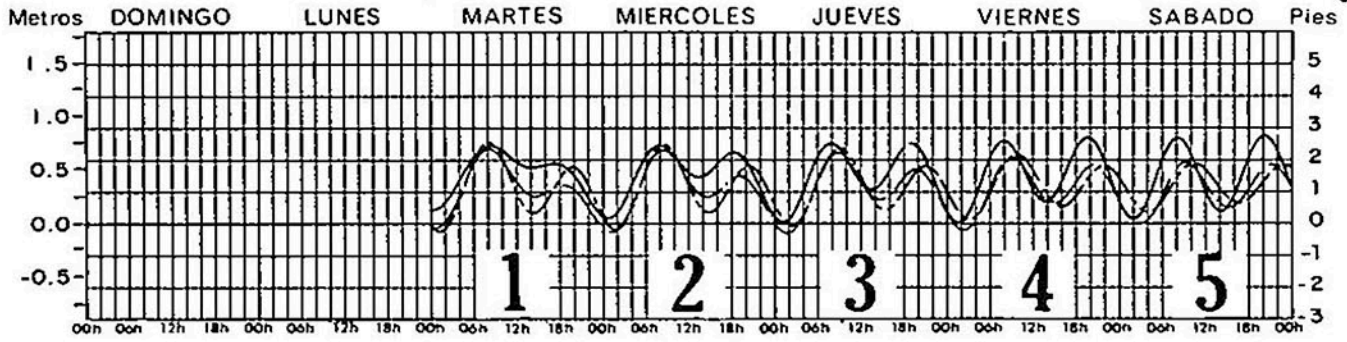


# OCTUBRE 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



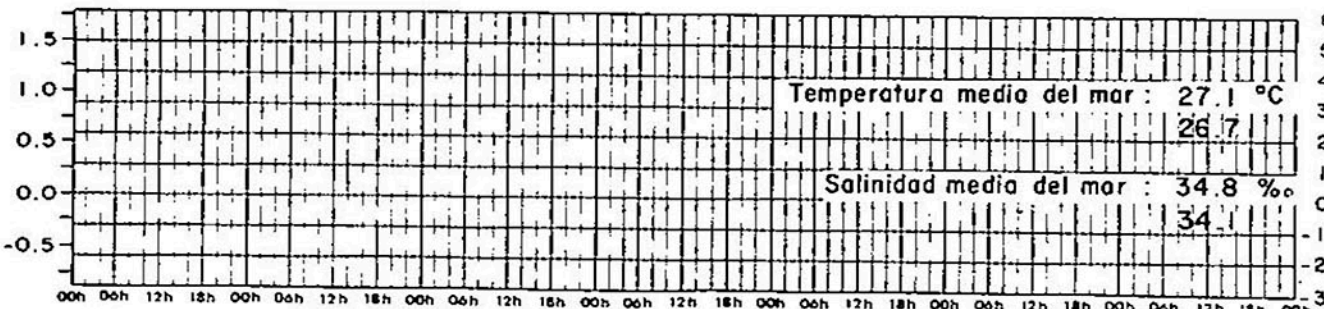
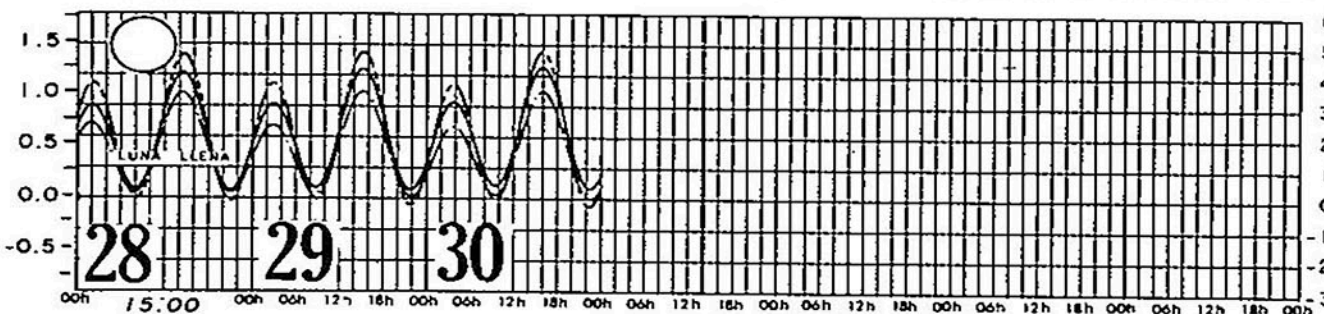
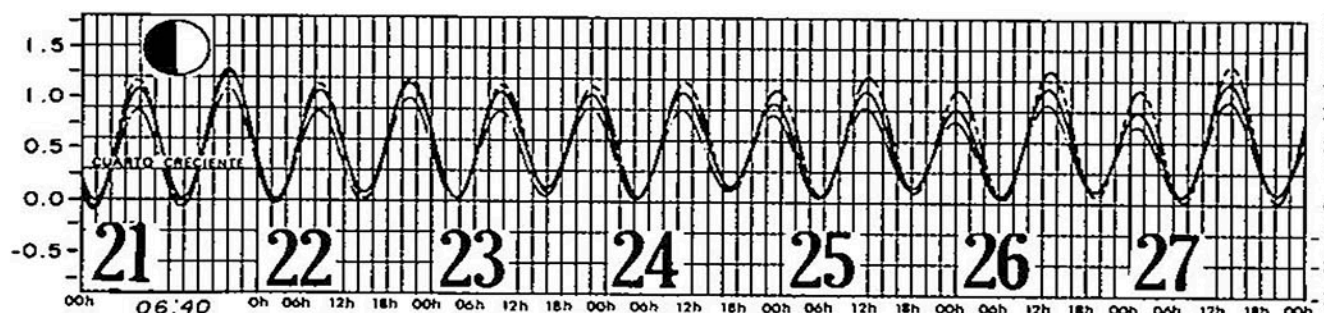
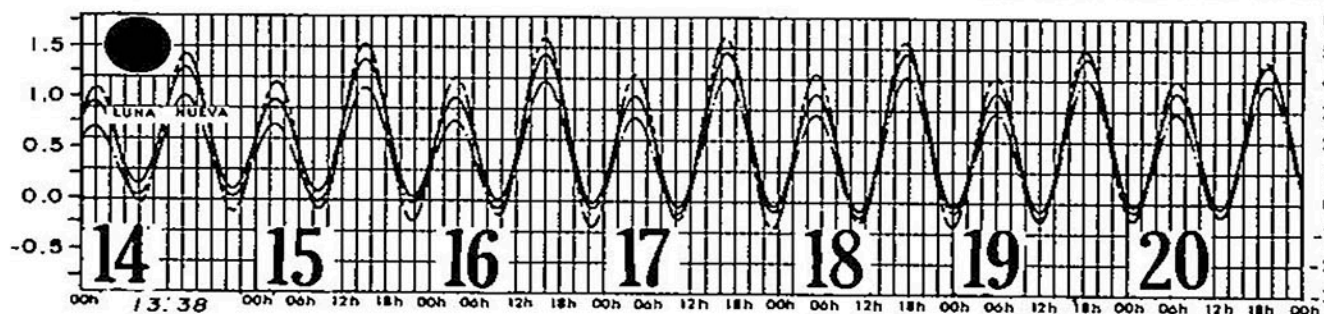
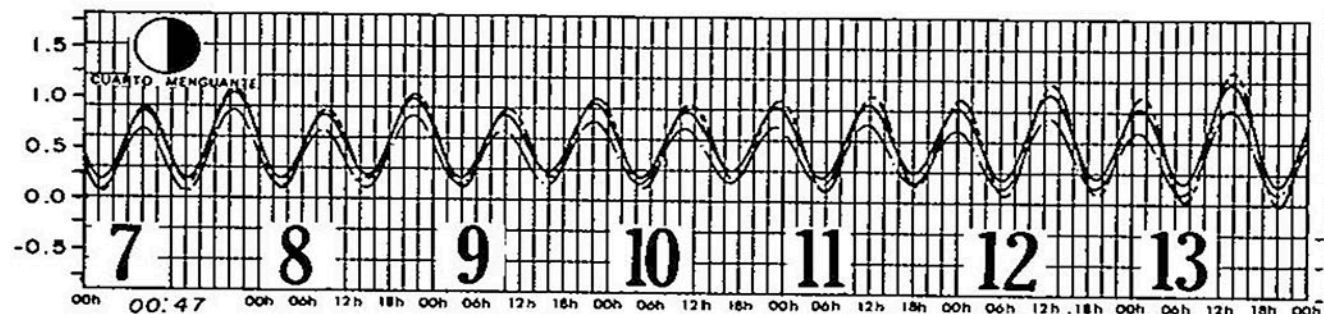
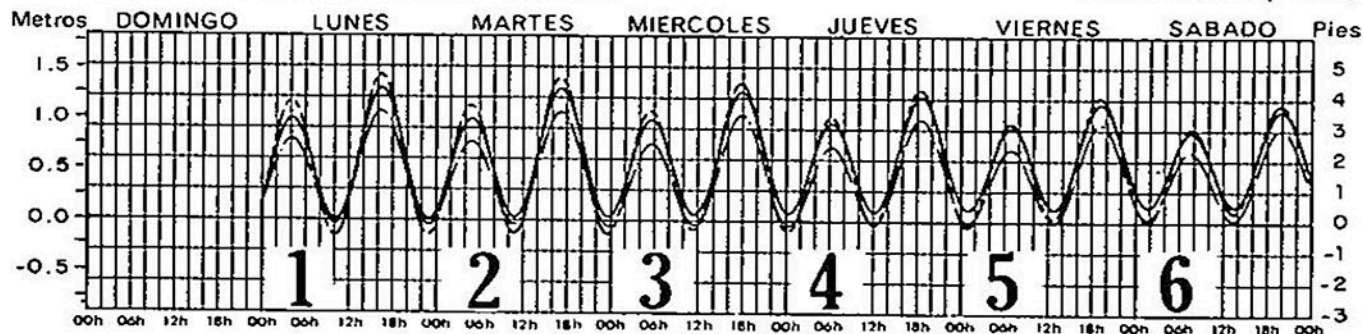




# ABRIL 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



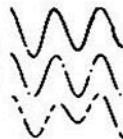
HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

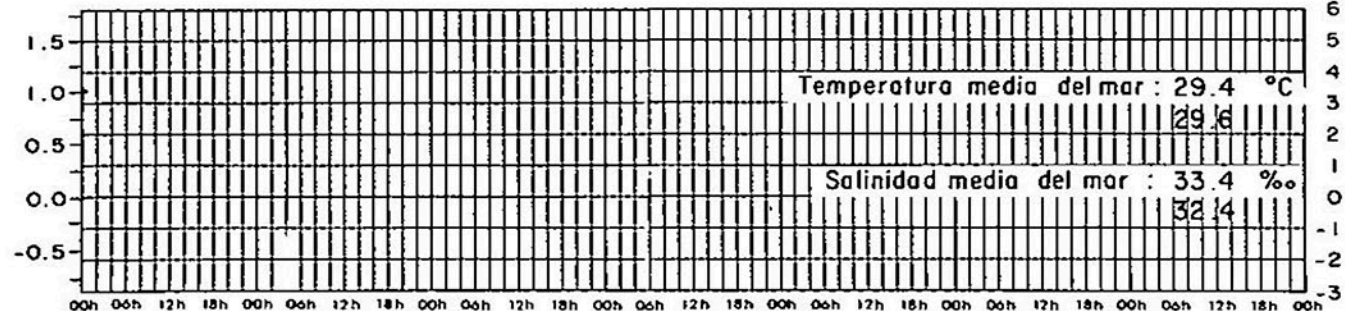
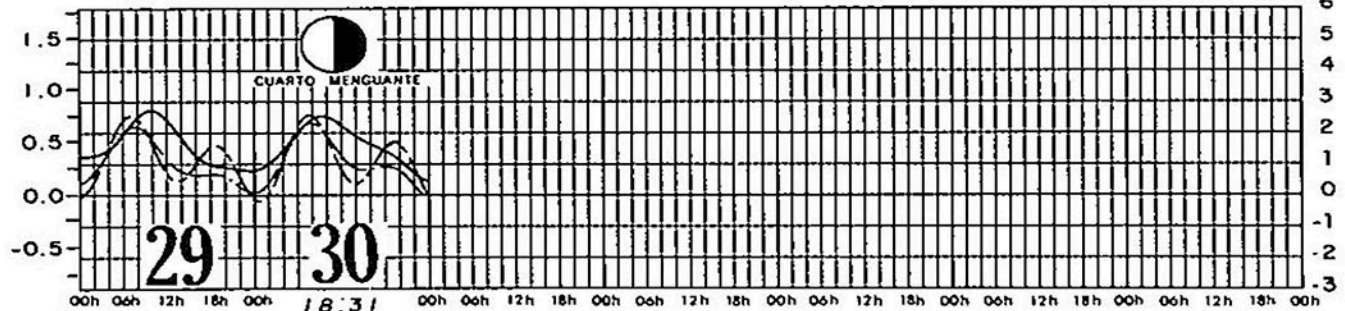
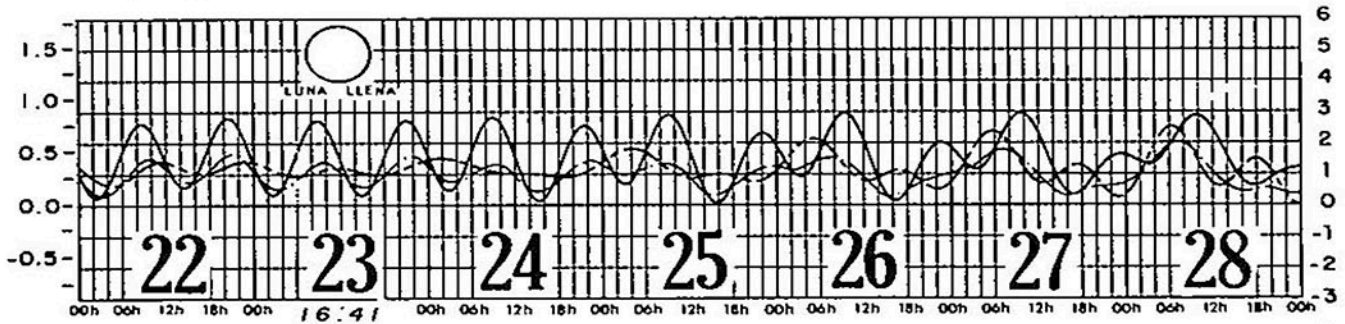
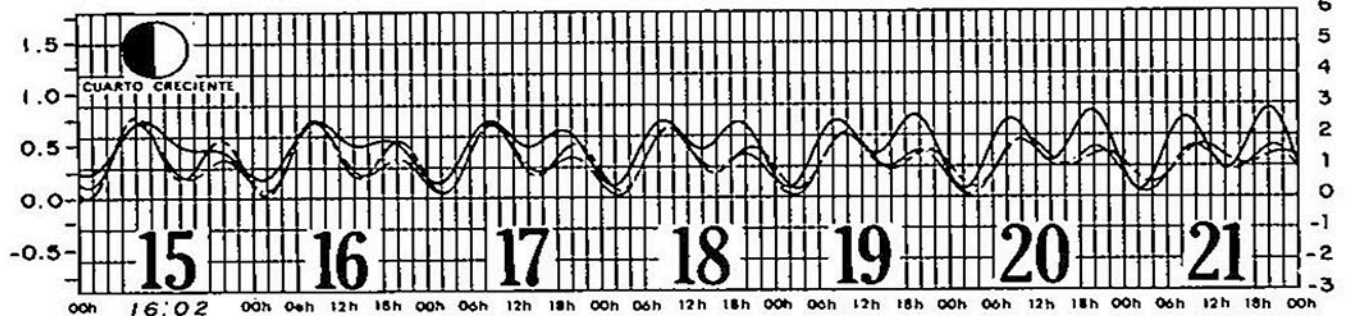
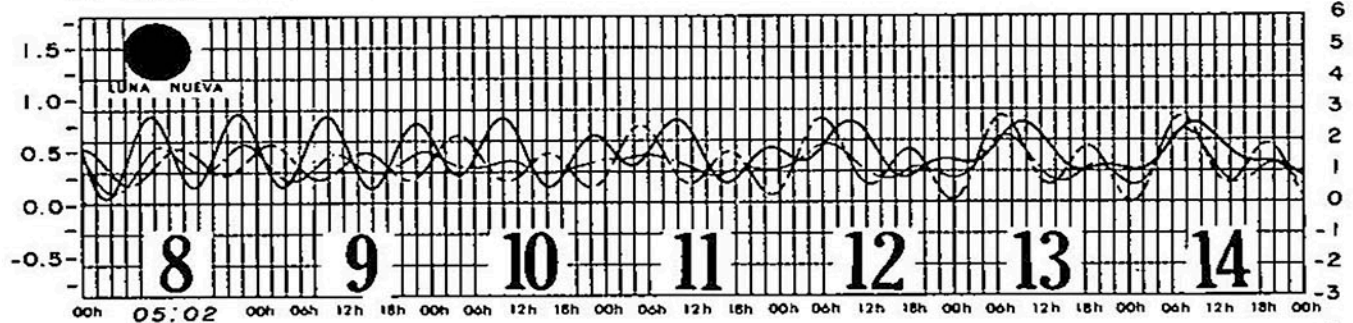
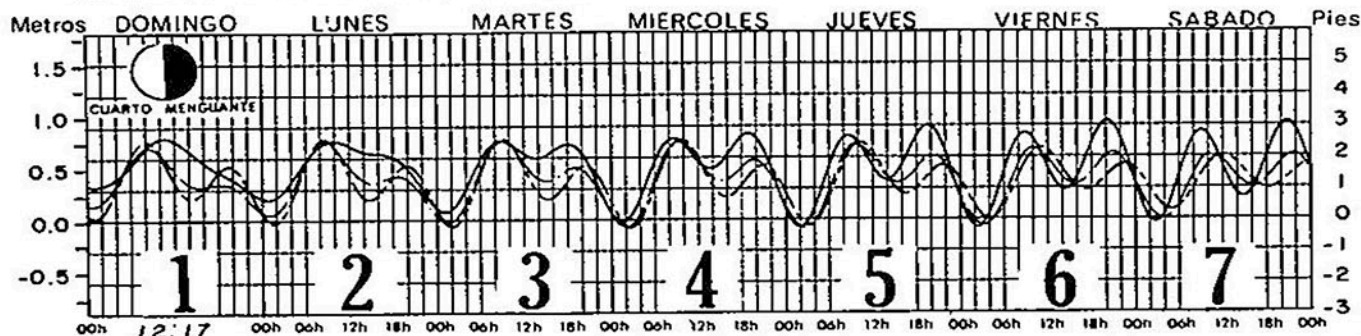


# SEPTIEMBRE 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.





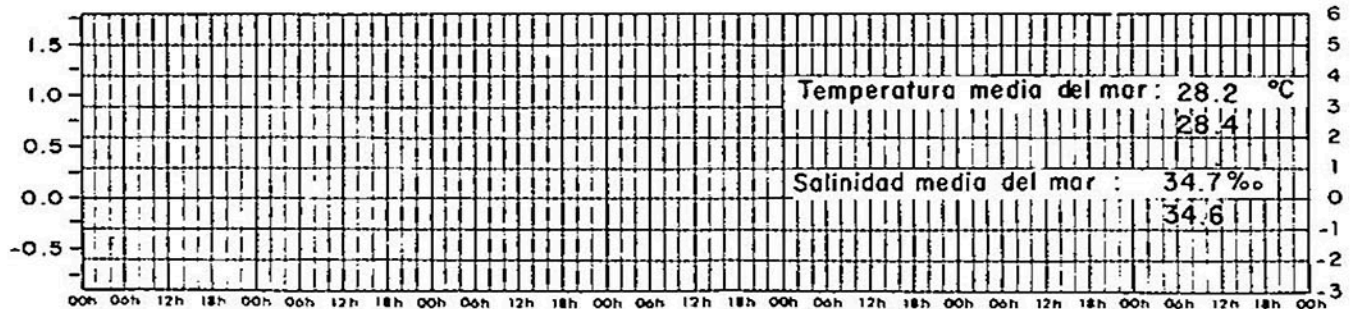
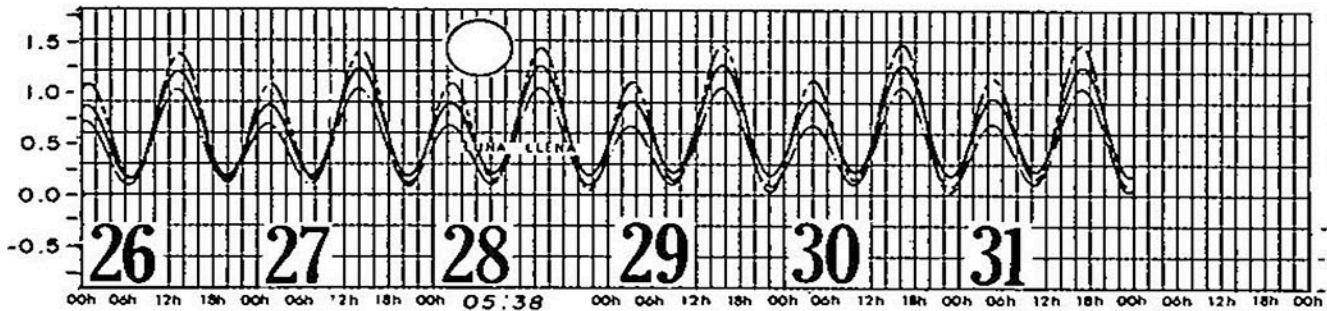
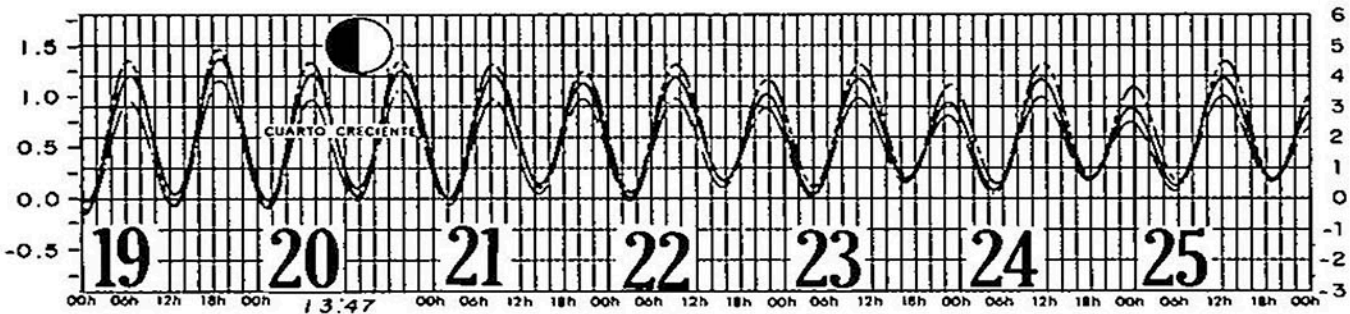
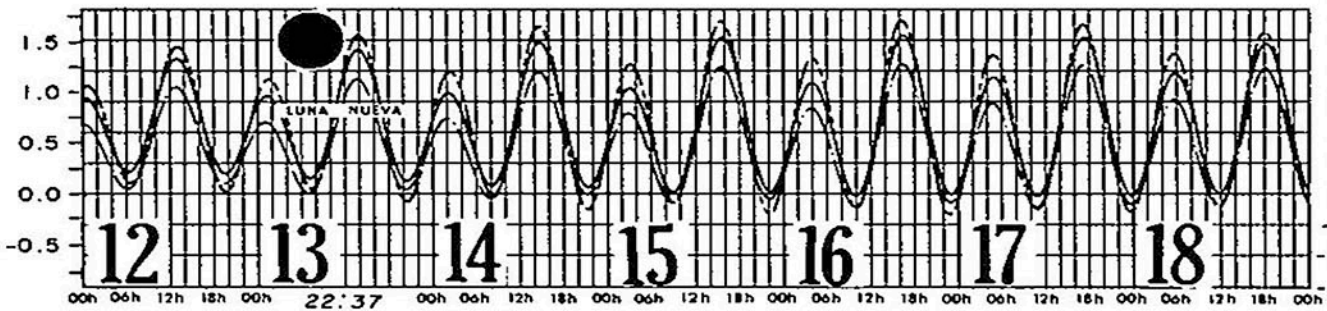
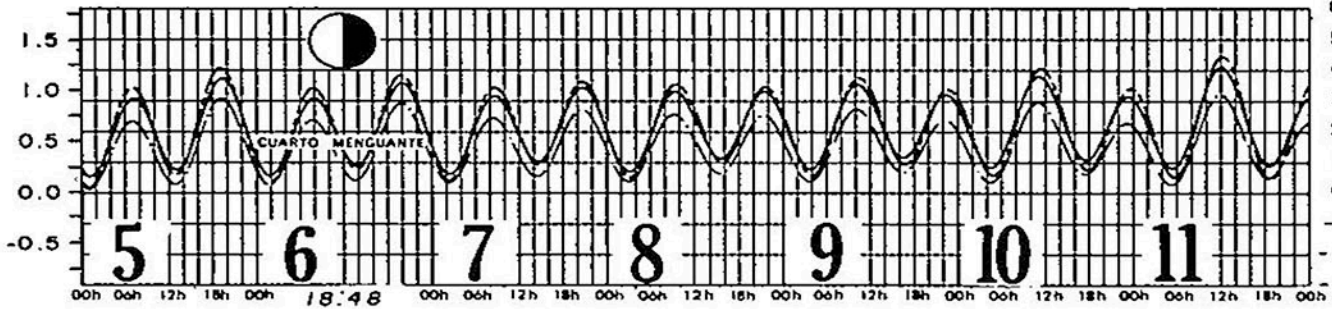
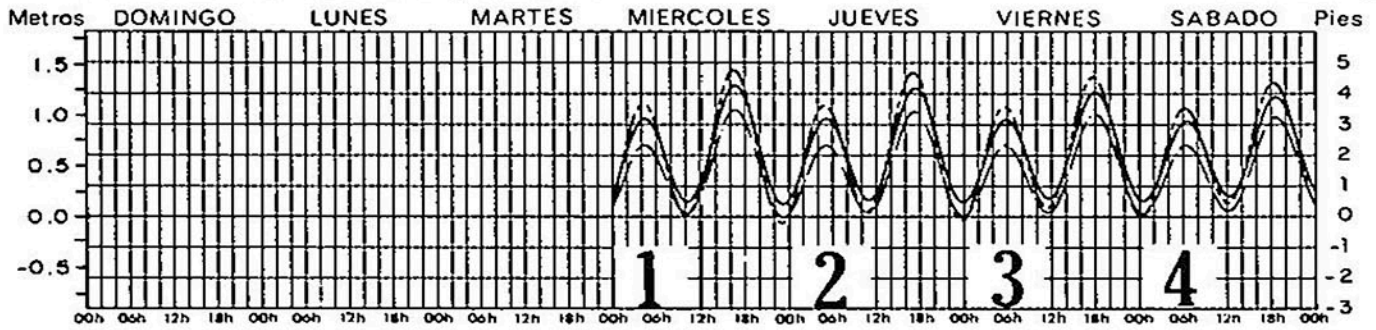


# MAYO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

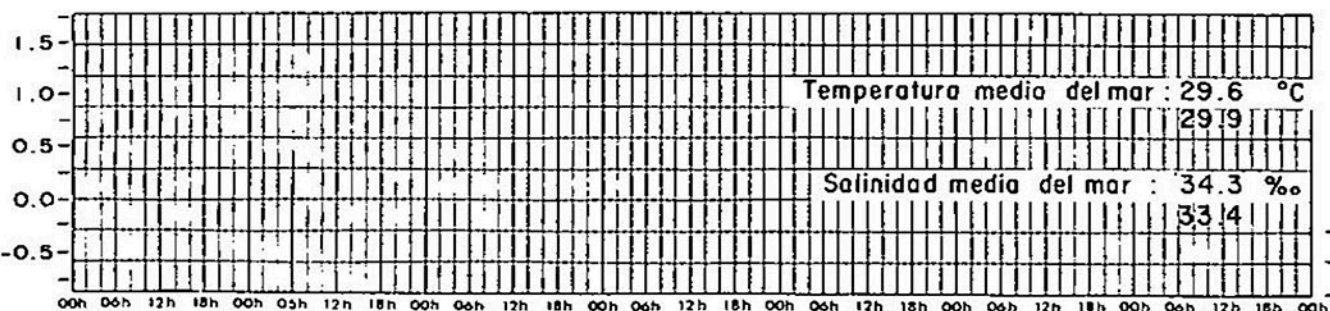
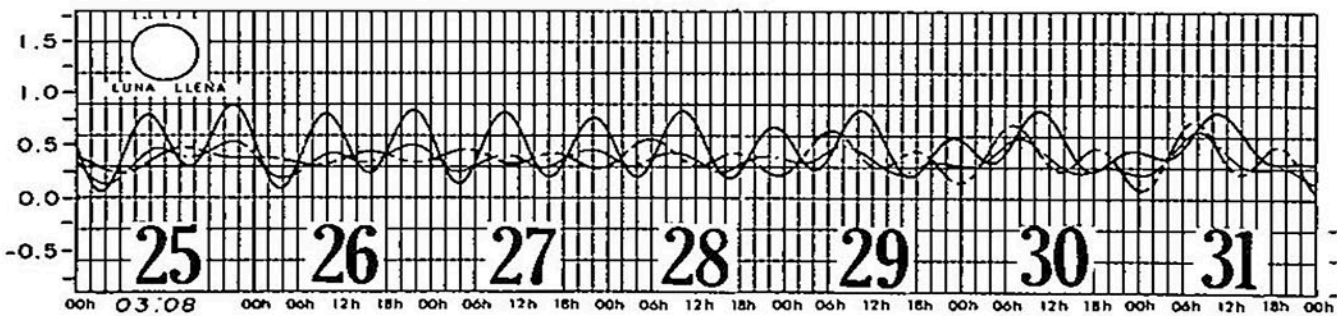
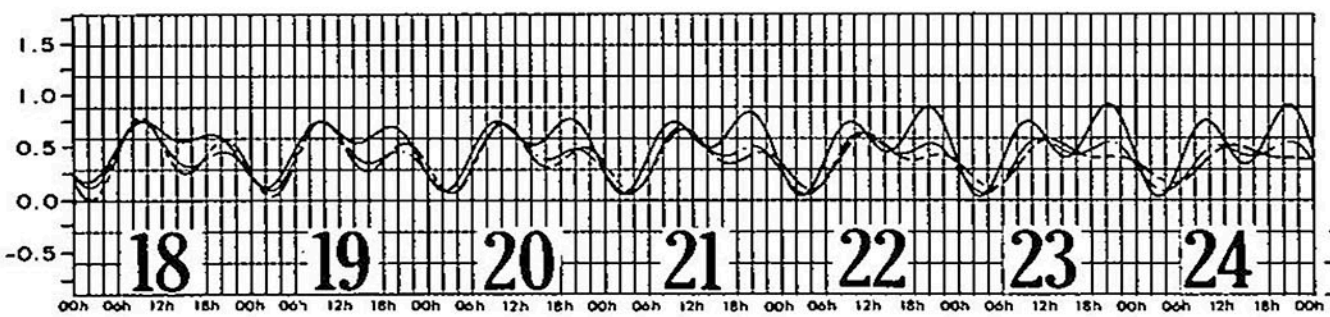
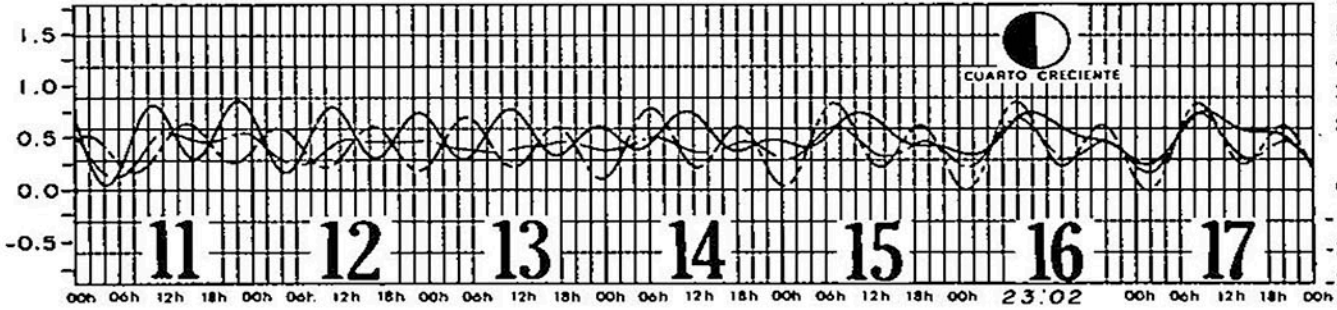
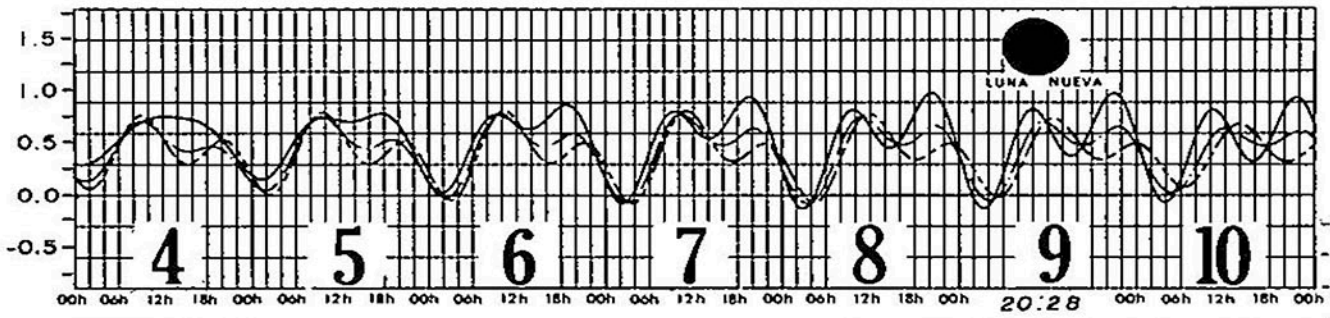
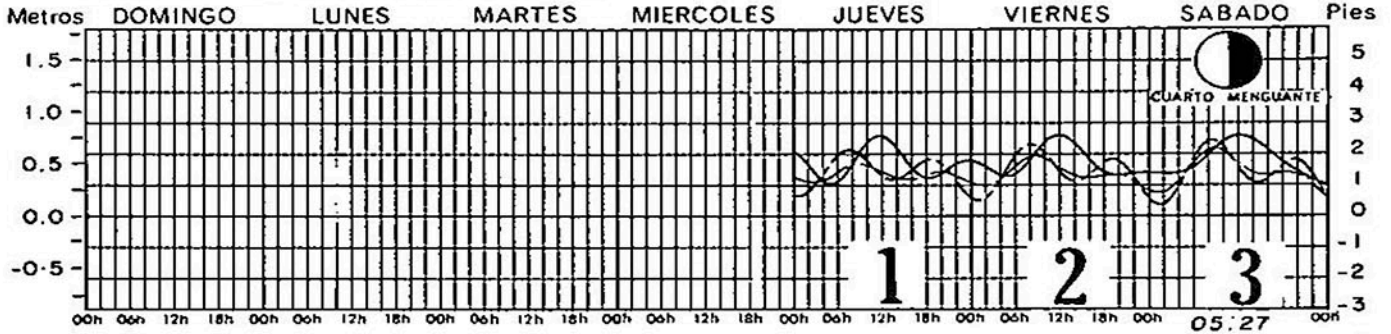


# A 'OS' J 1991

MANZANILLO, COL  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



Temperatura media del mar : 29.6 °C

29.9

Salinidad media del mar : 34.3 ‰

33.4

HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.





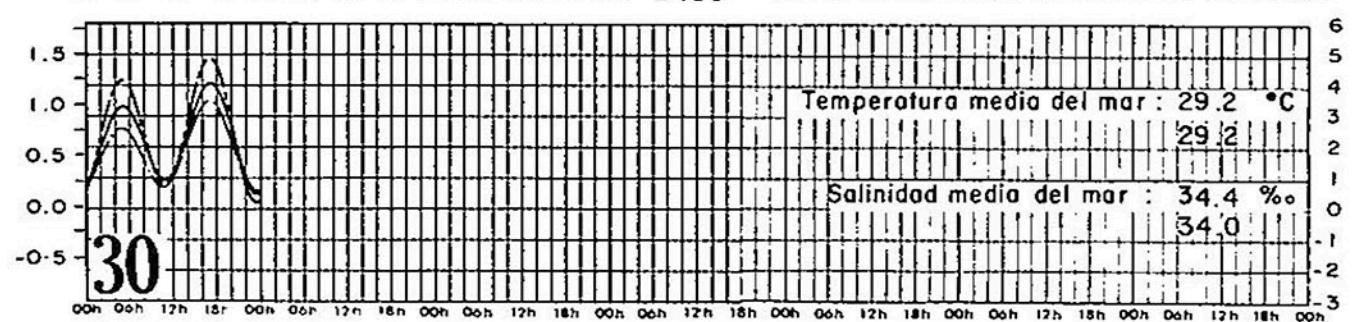
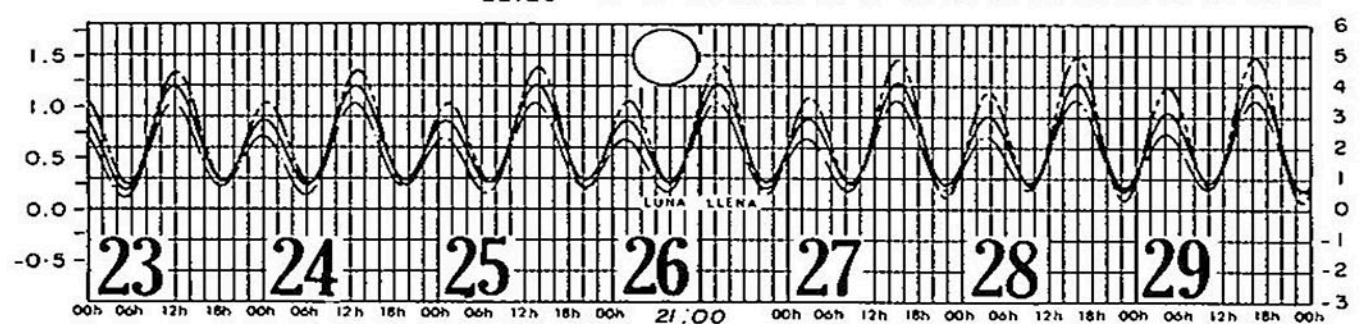
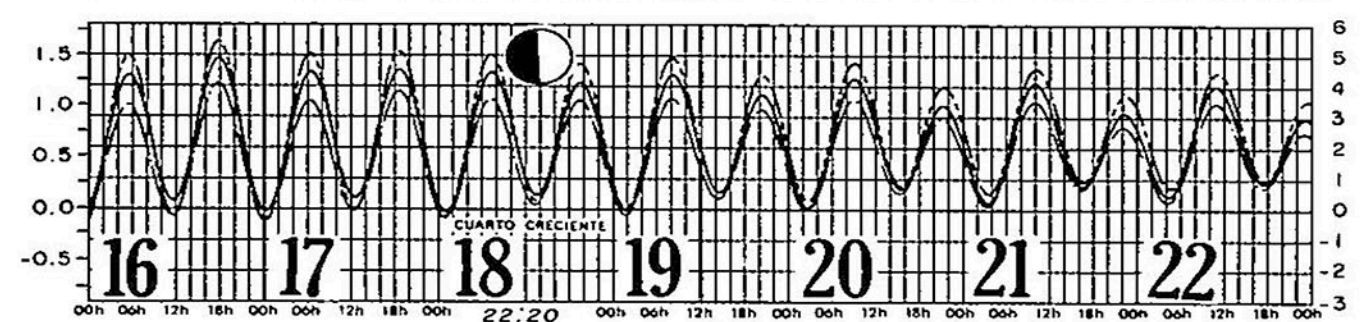
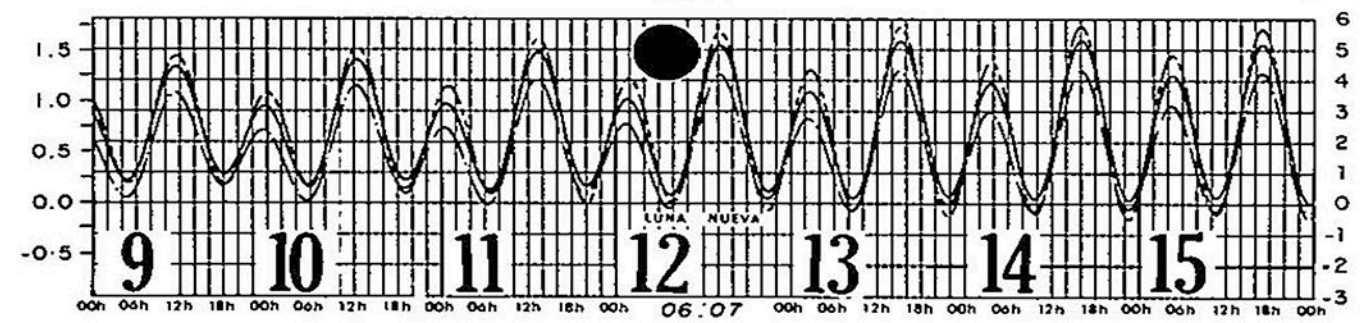
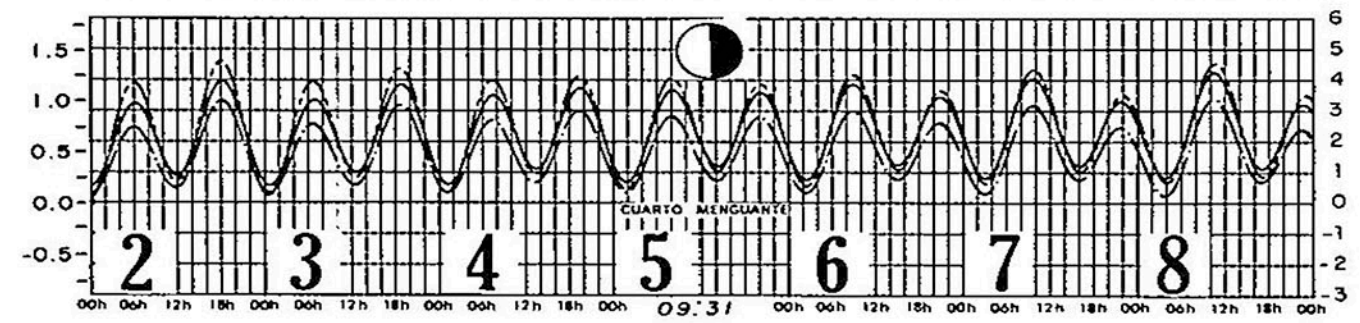
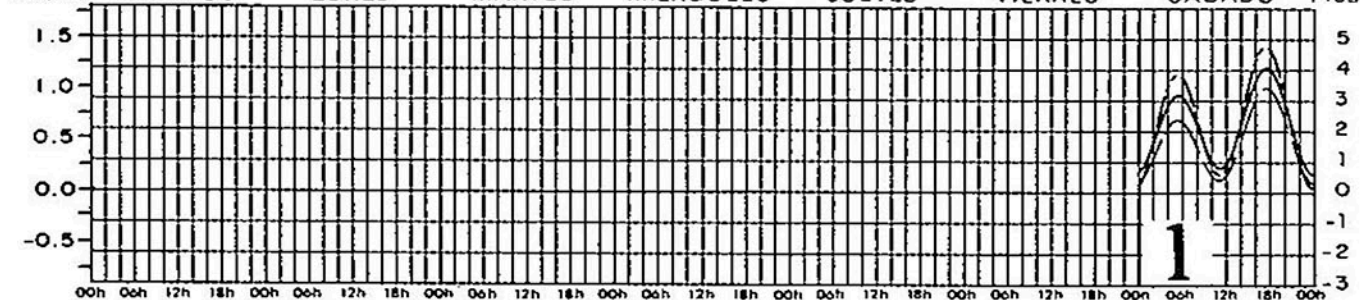
# JUNIO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.



# JULIO 1991

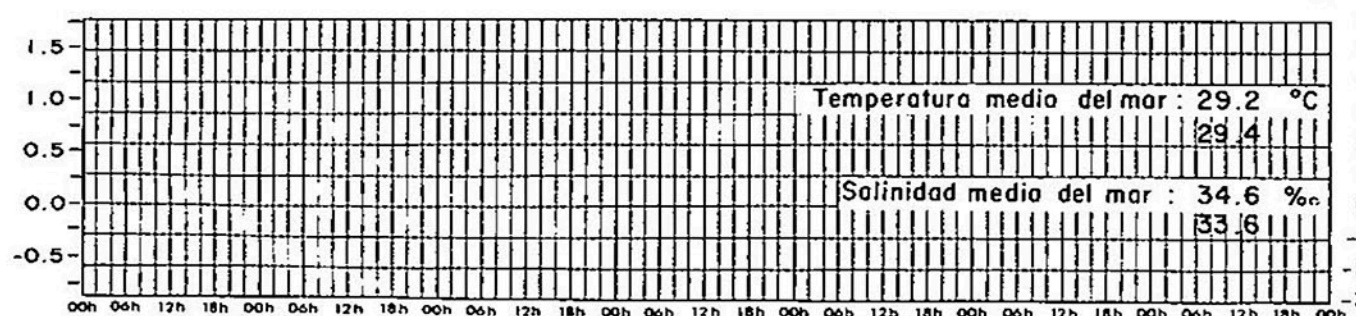
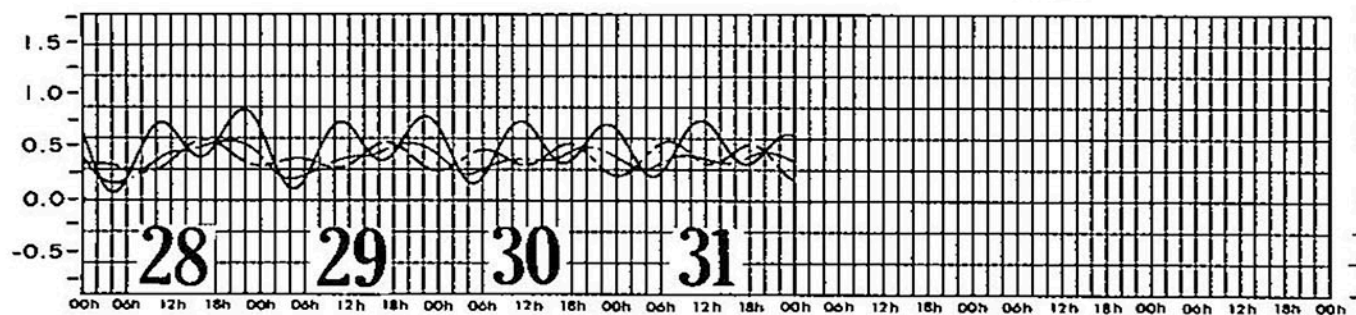
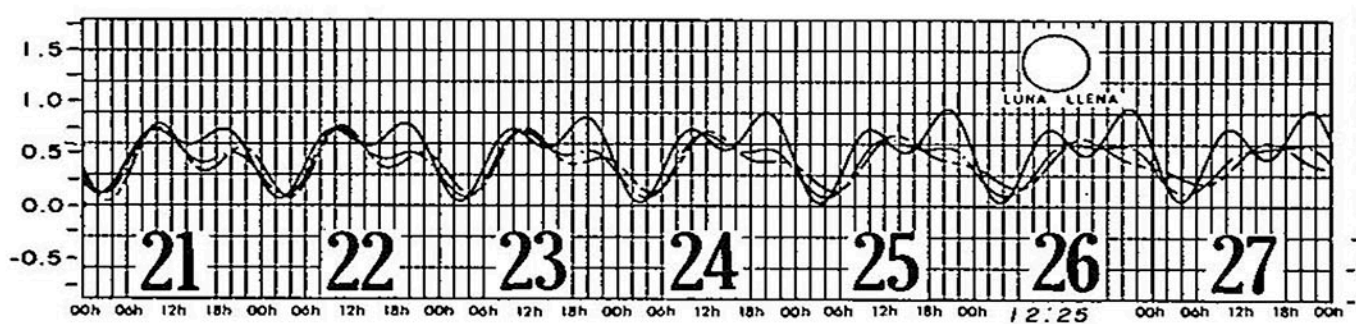
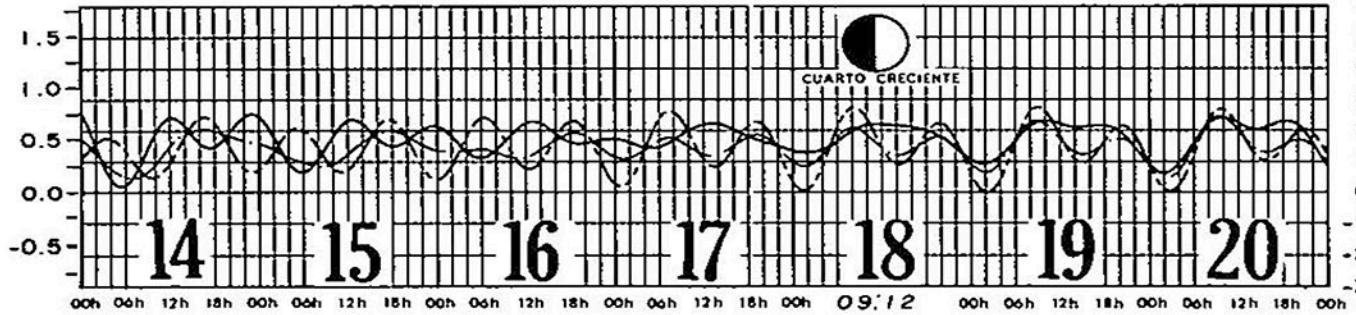
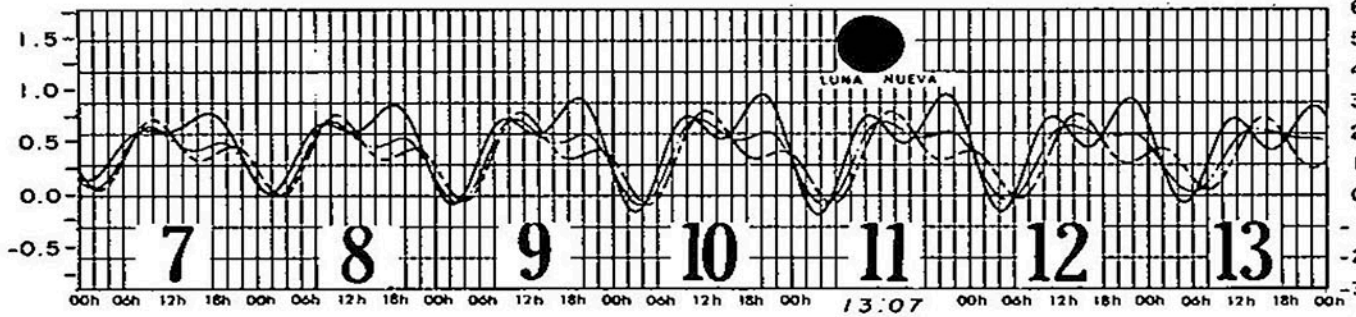
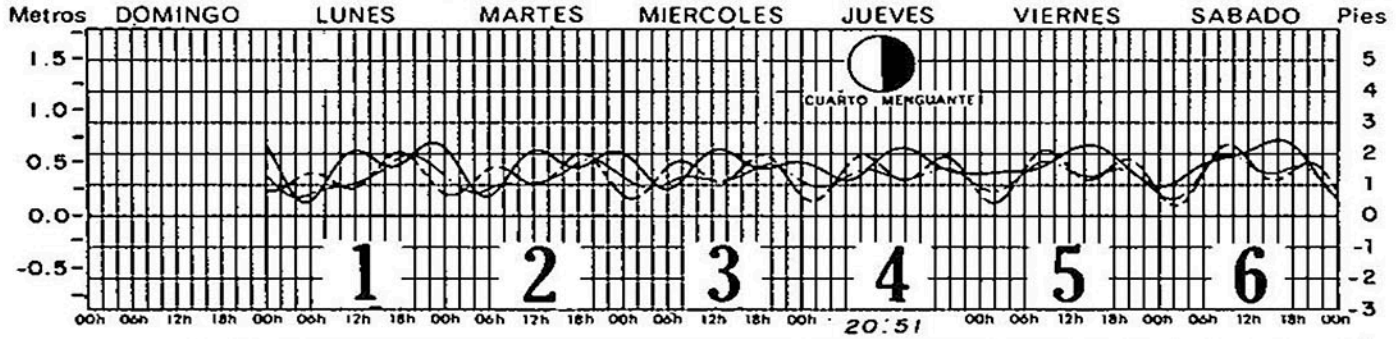
MANZANILLO, COL.

L. CARDENAS, MICH.

ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.



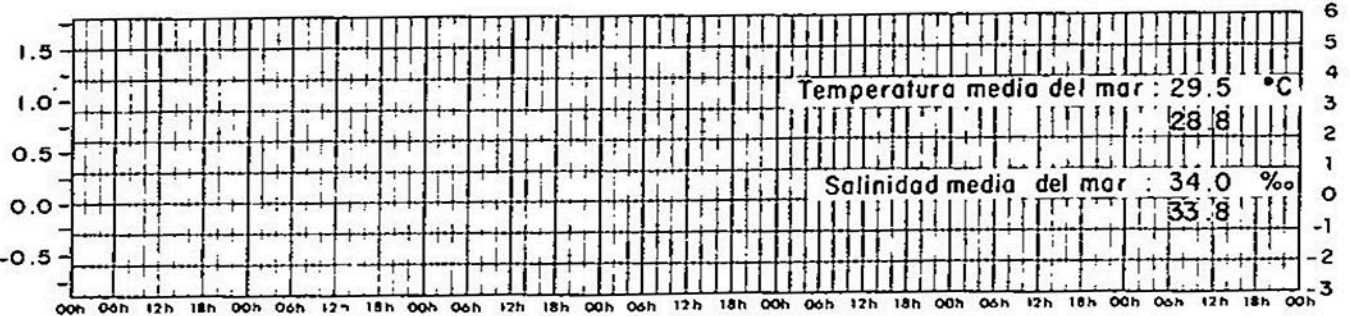
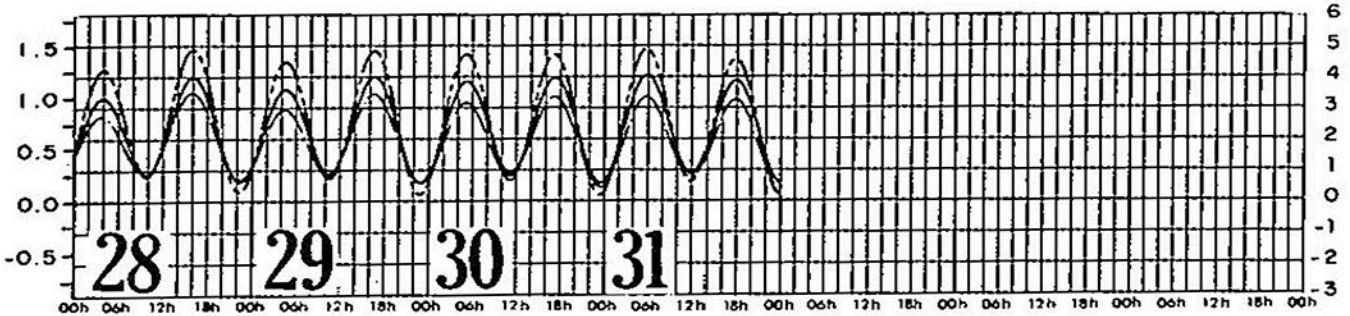
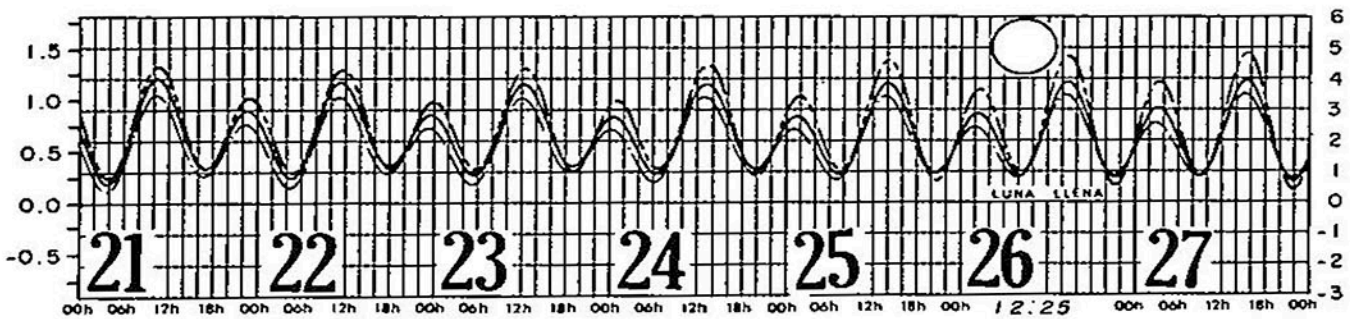
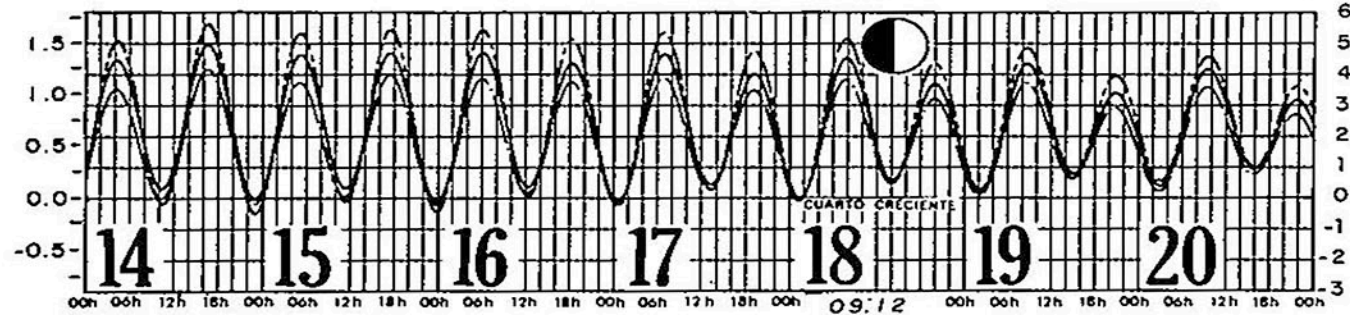
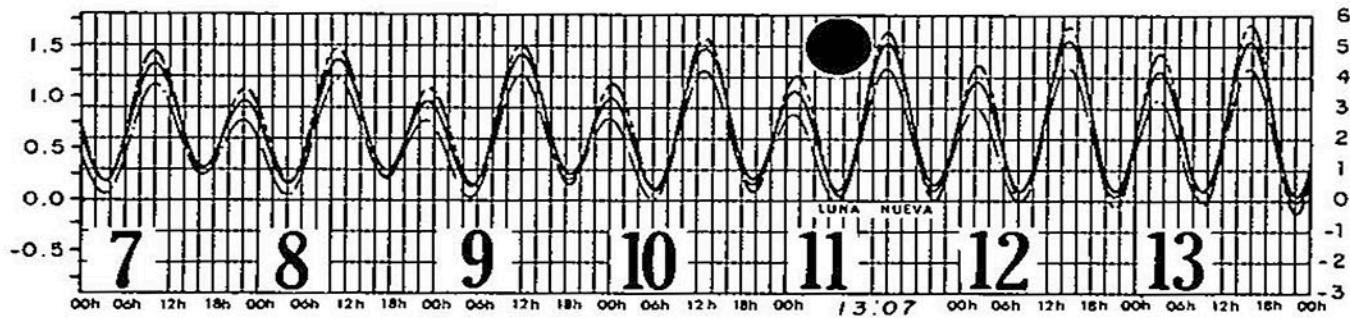
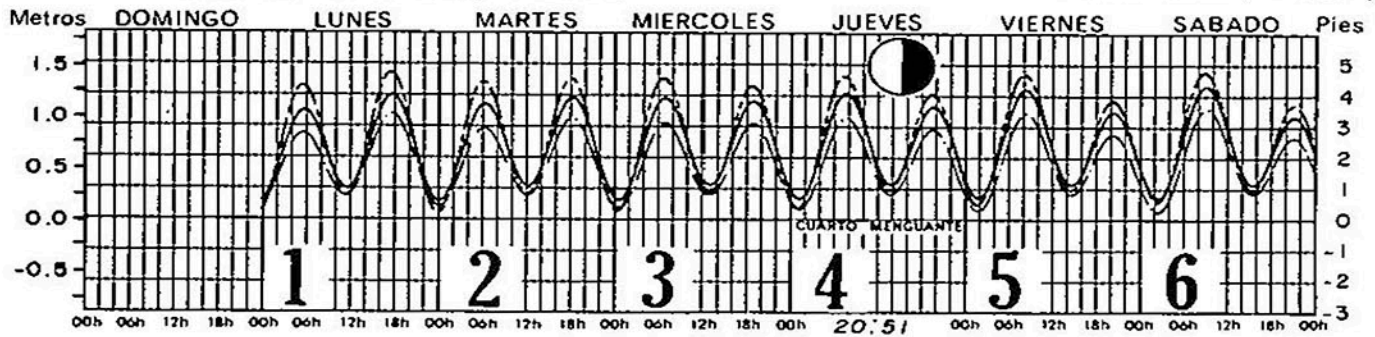


# JULIO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

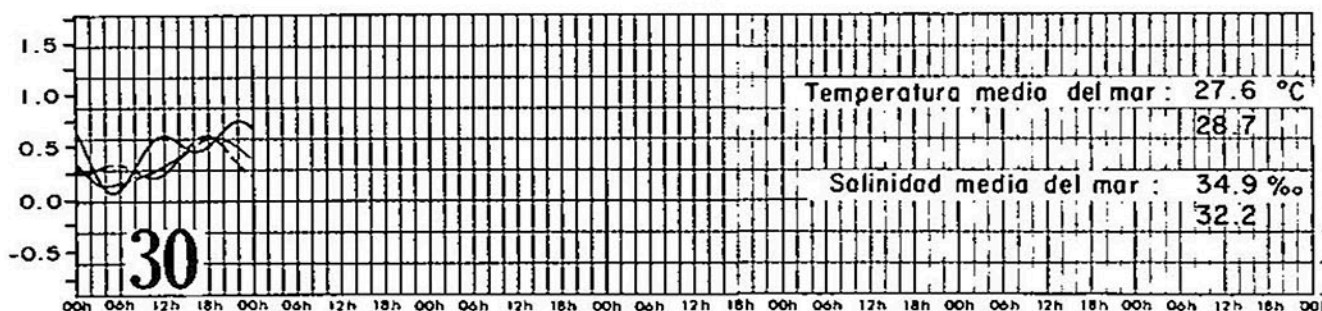
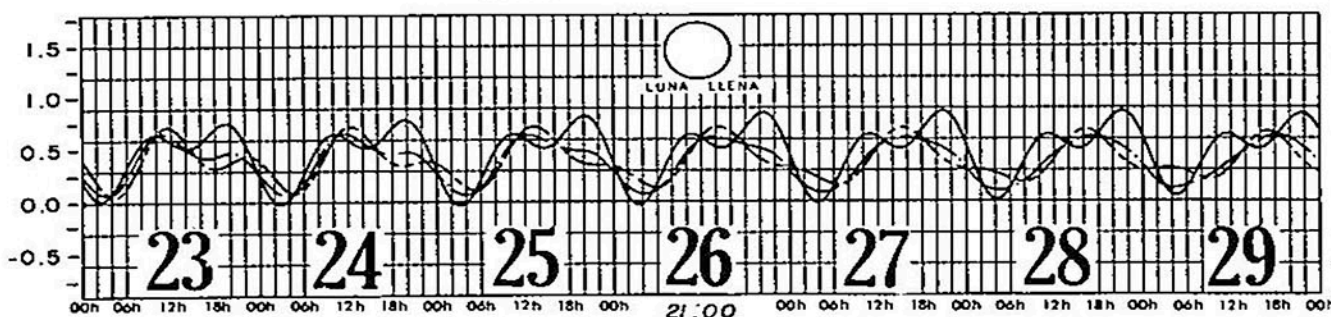
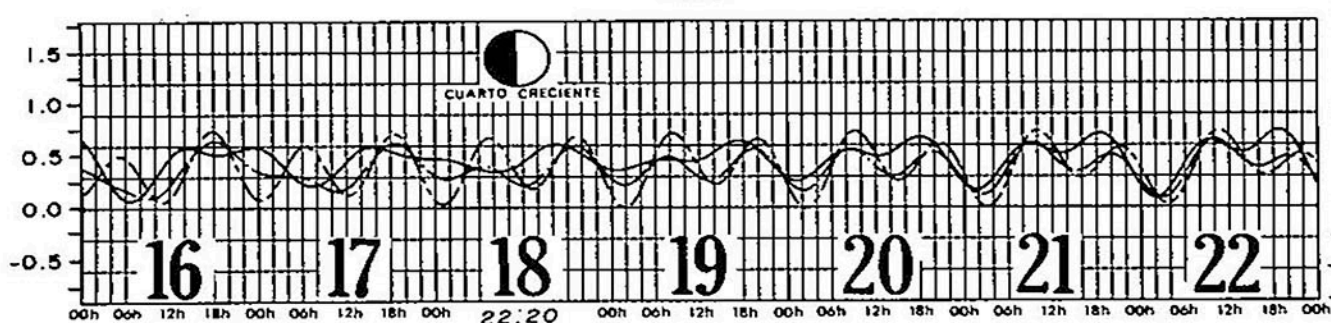
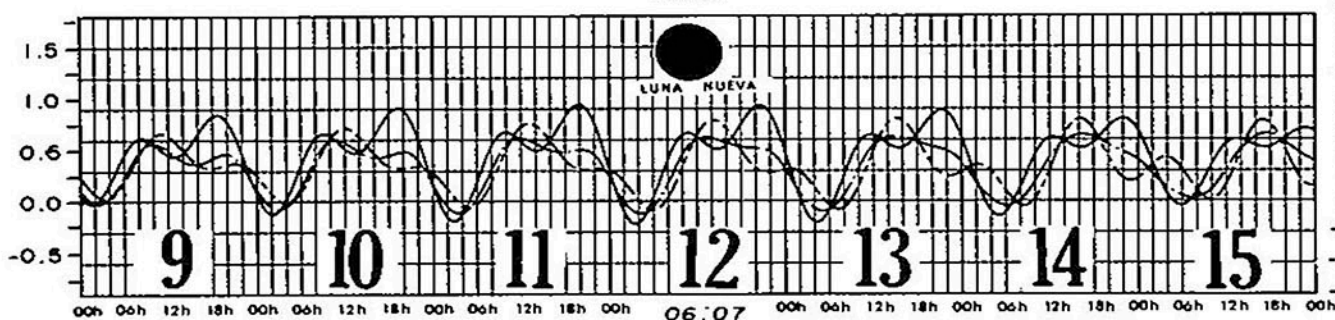
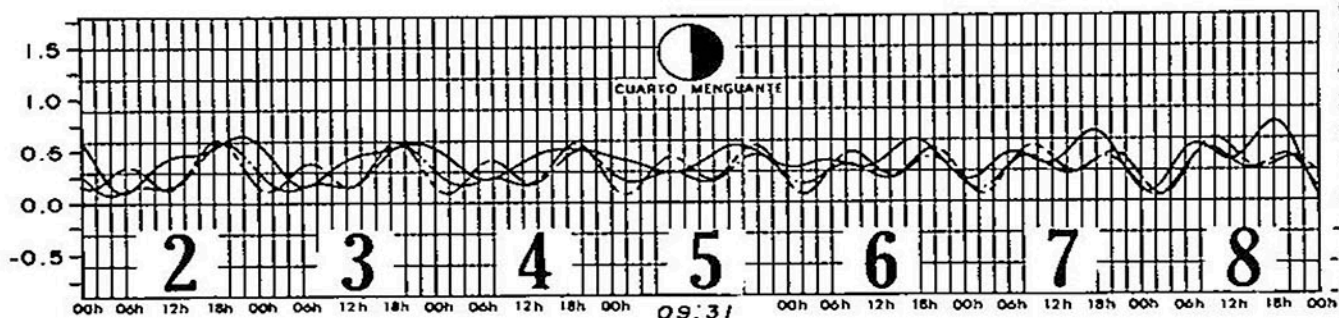
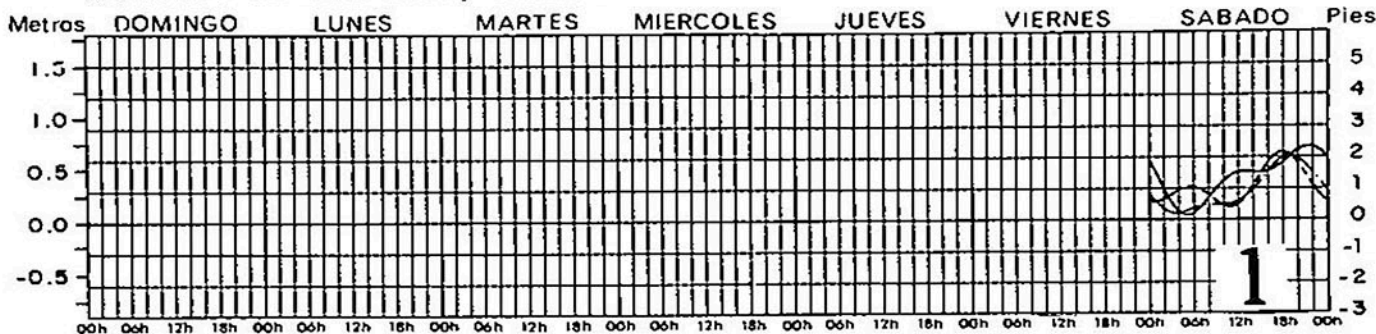


# JUNIO 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.





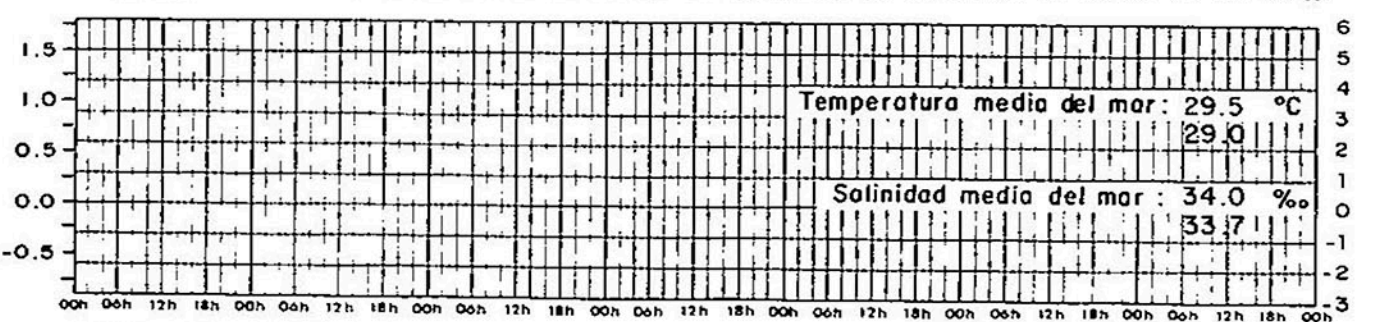
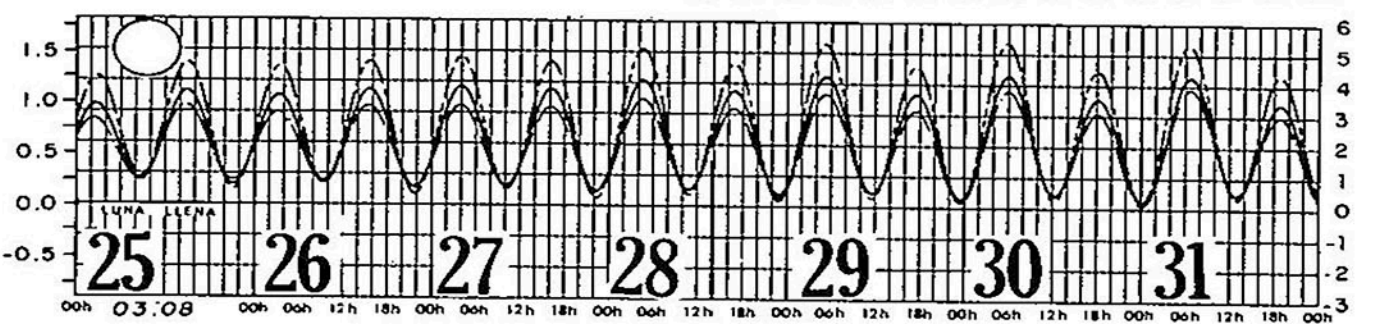
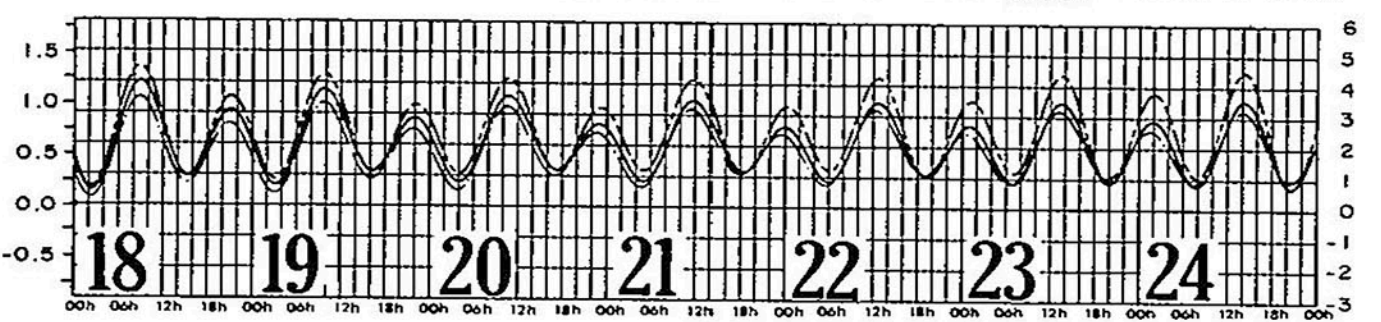
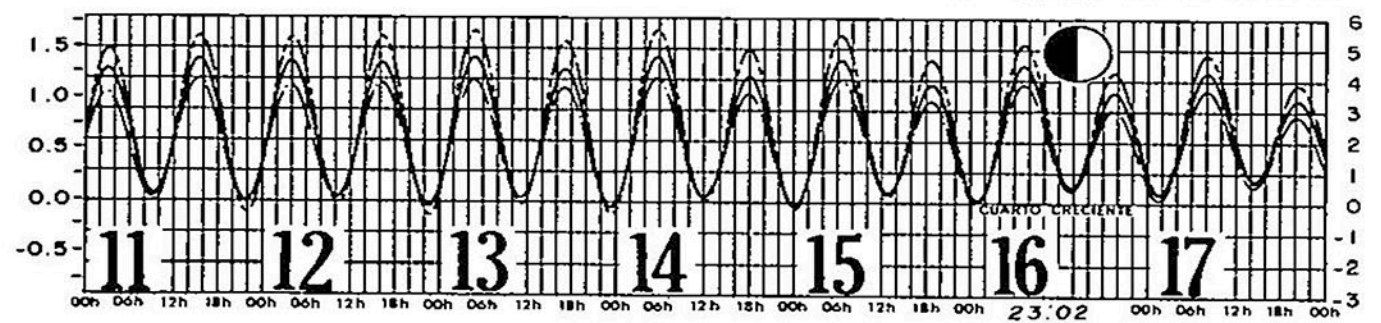
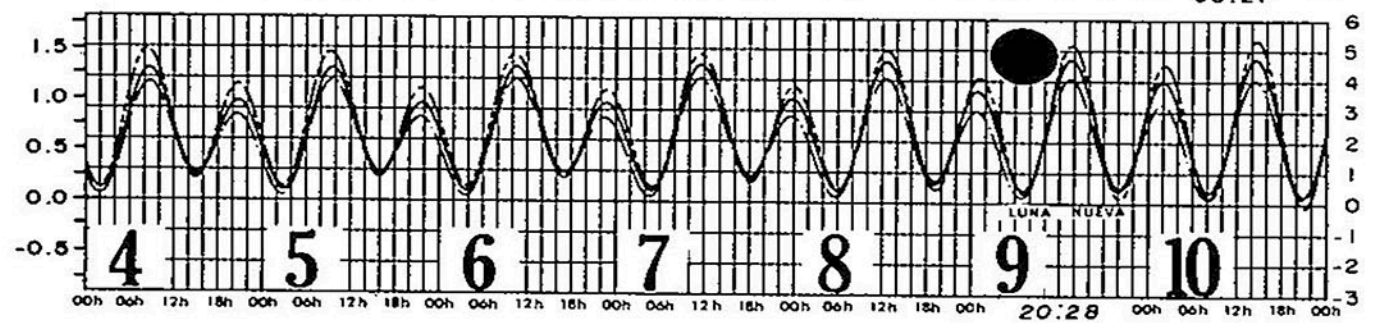
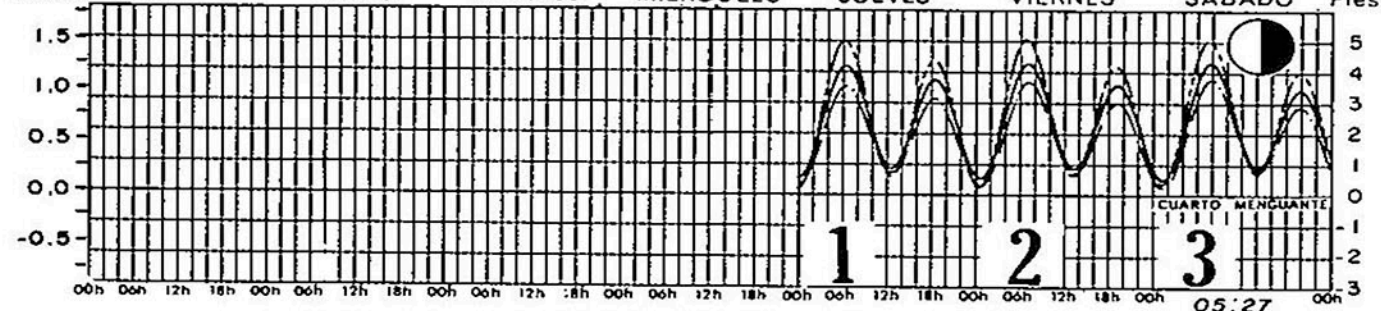
# AGOSTO 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS.



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

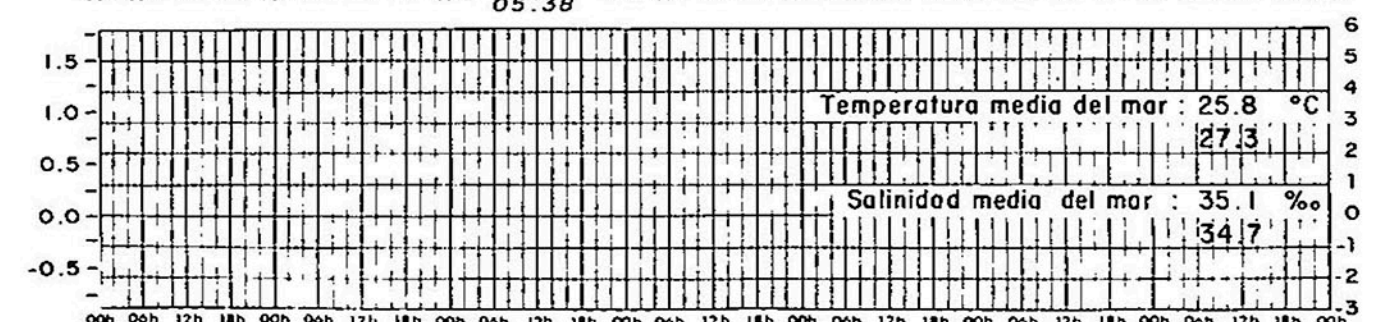
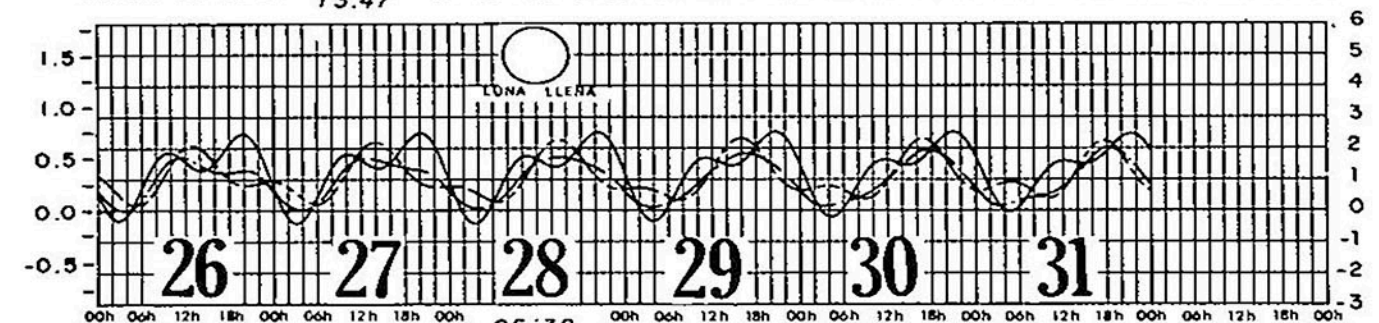
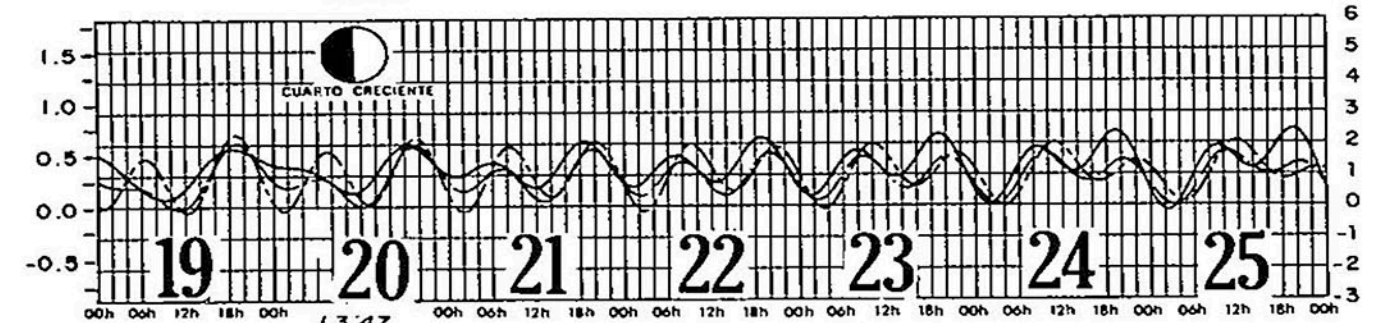
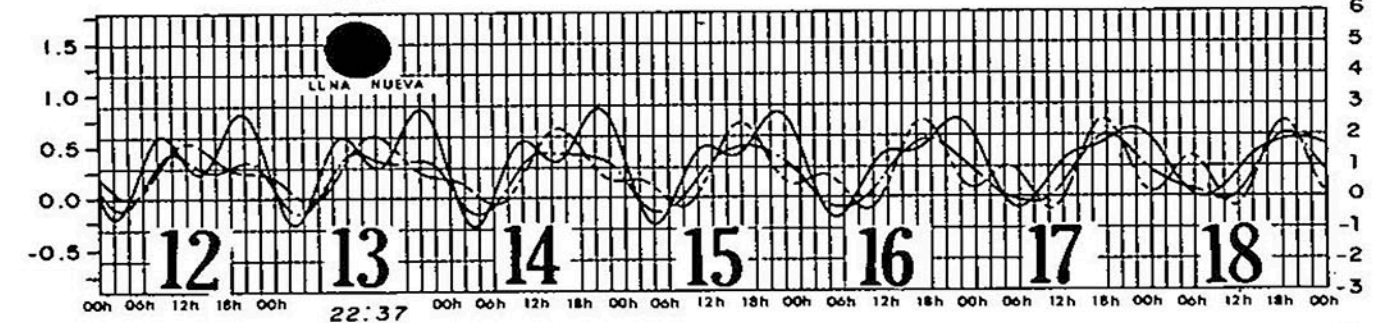
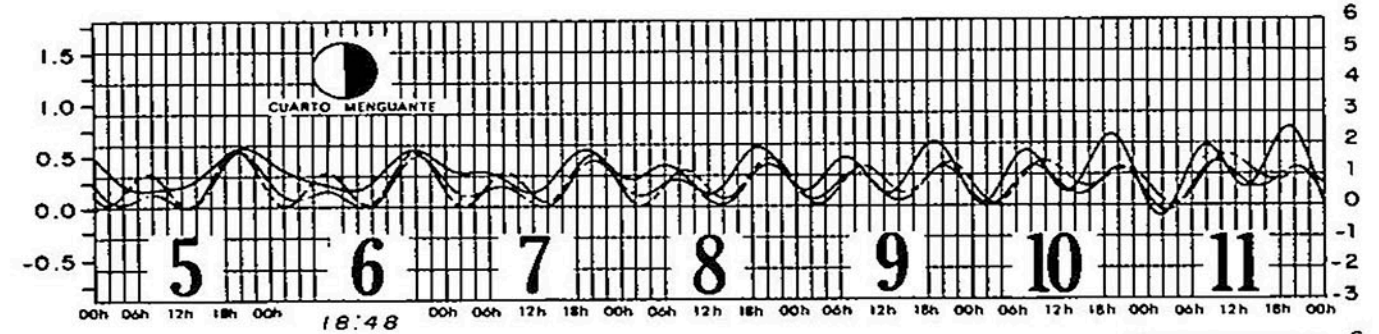
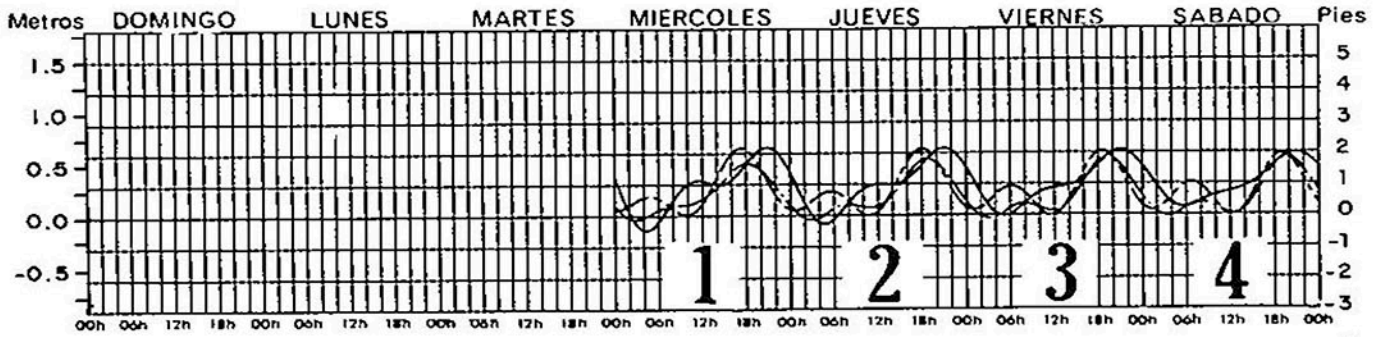


# MAYO 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.





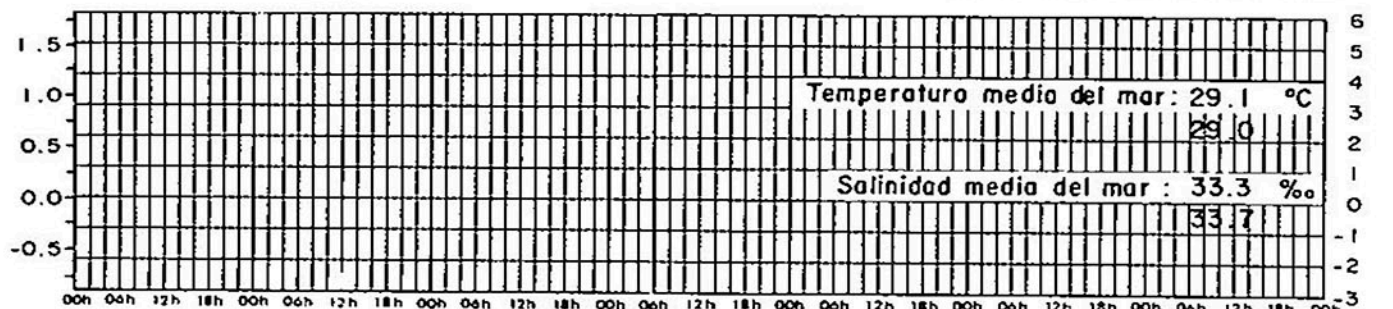
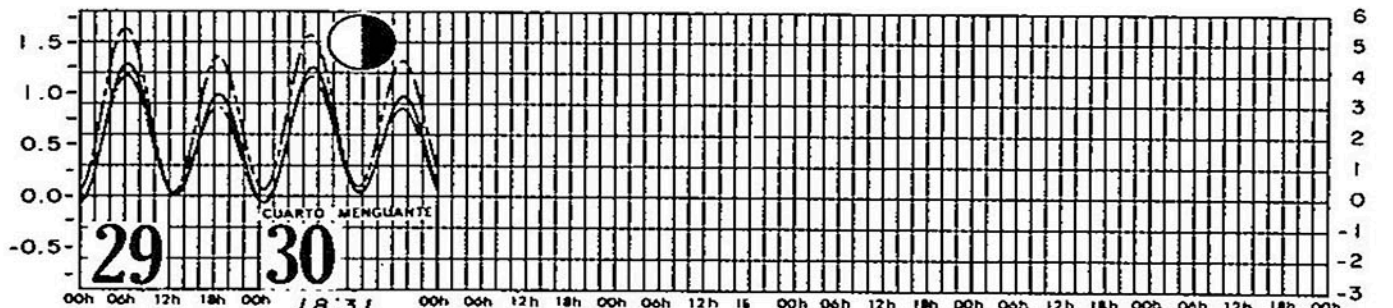
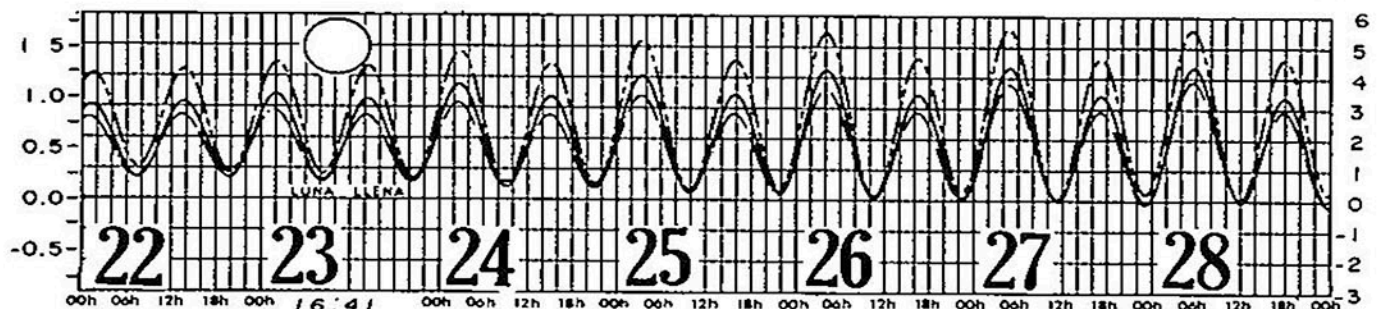
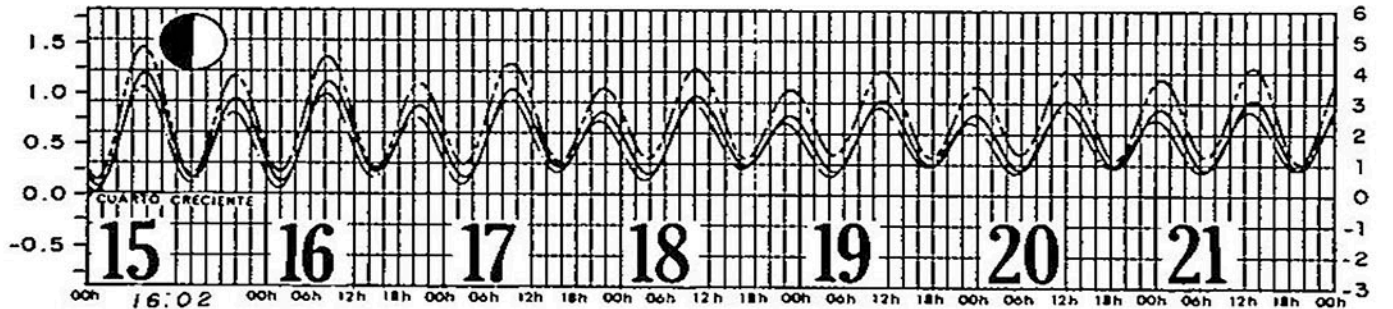
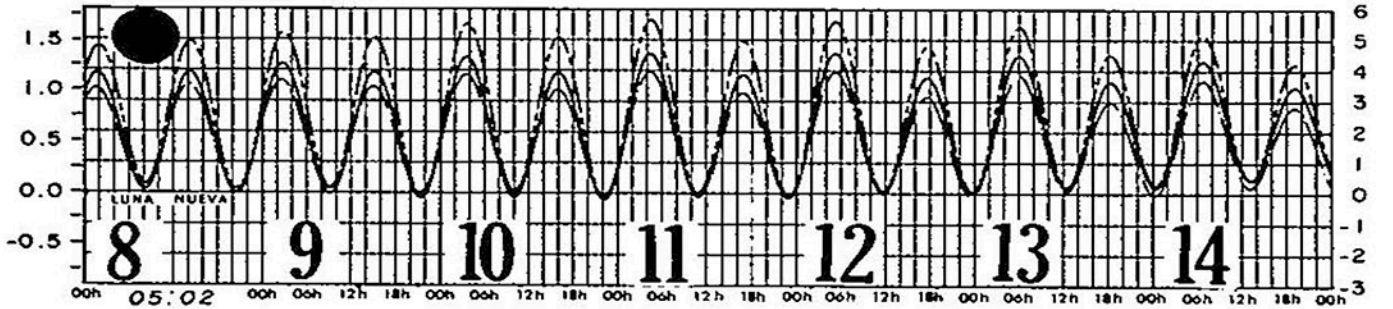
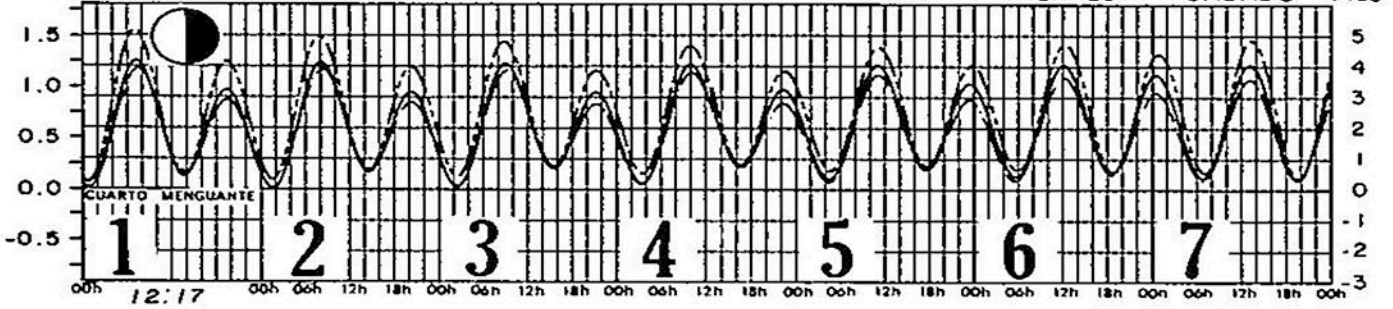
# SEPTIEMBRE 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS



INSTITUTO DE GEOFISICA, U.N.A.M.

Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

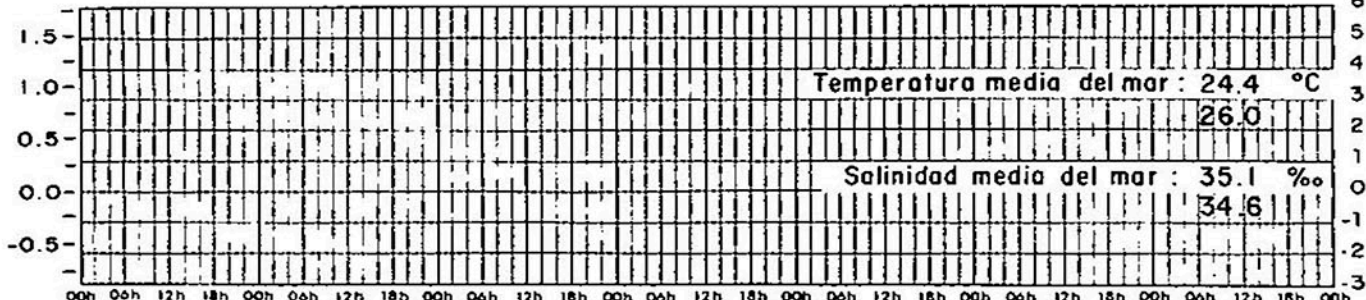
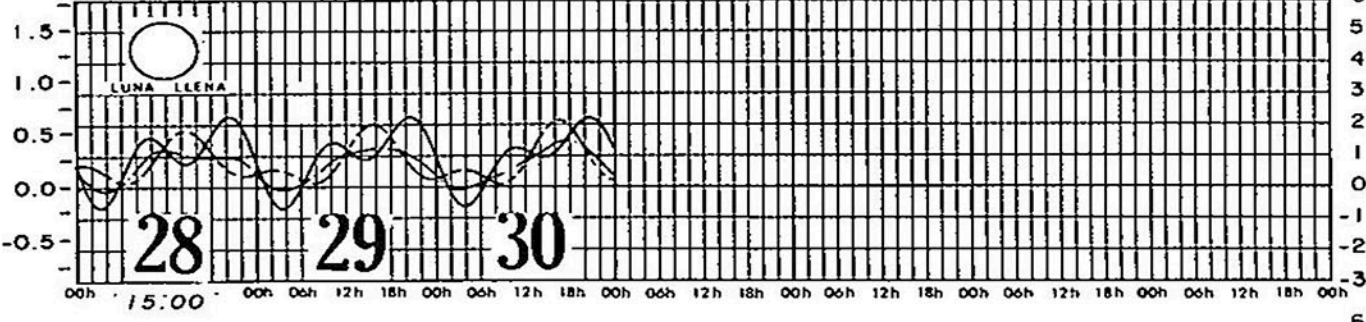
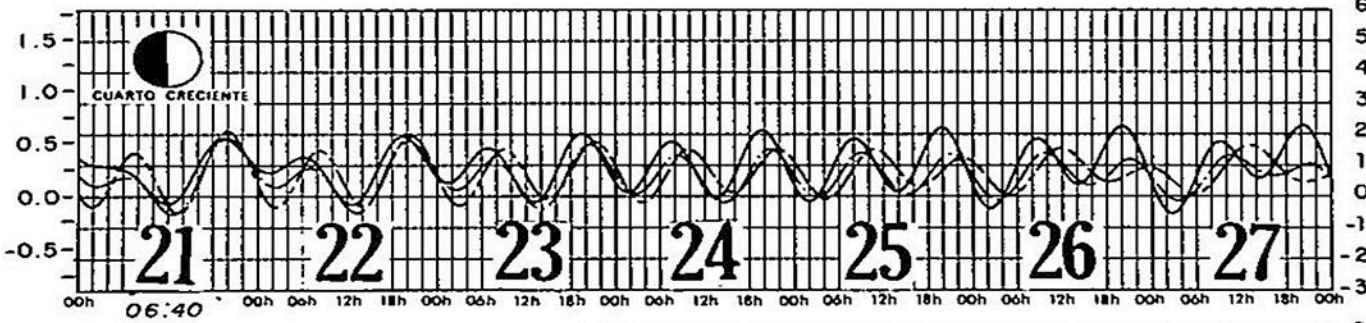
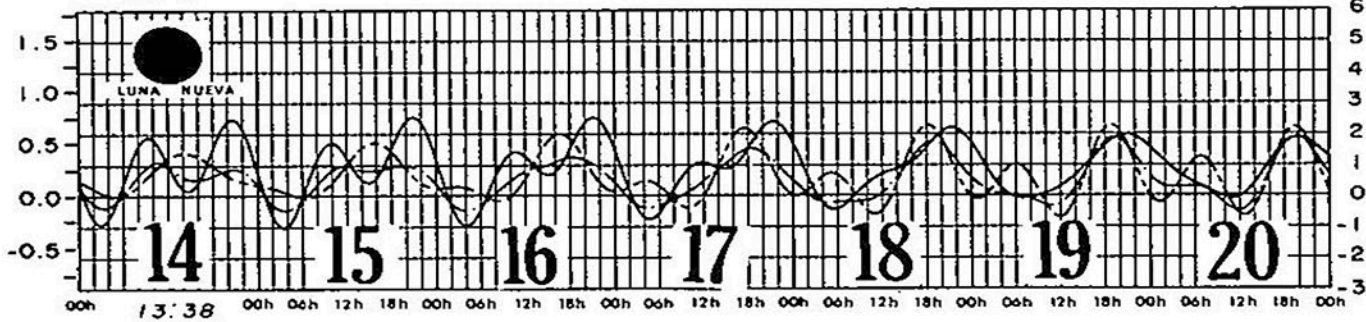
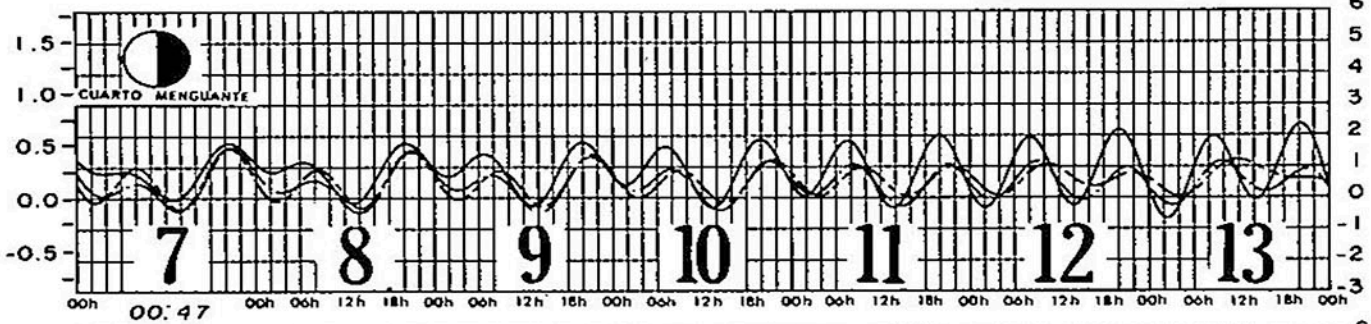
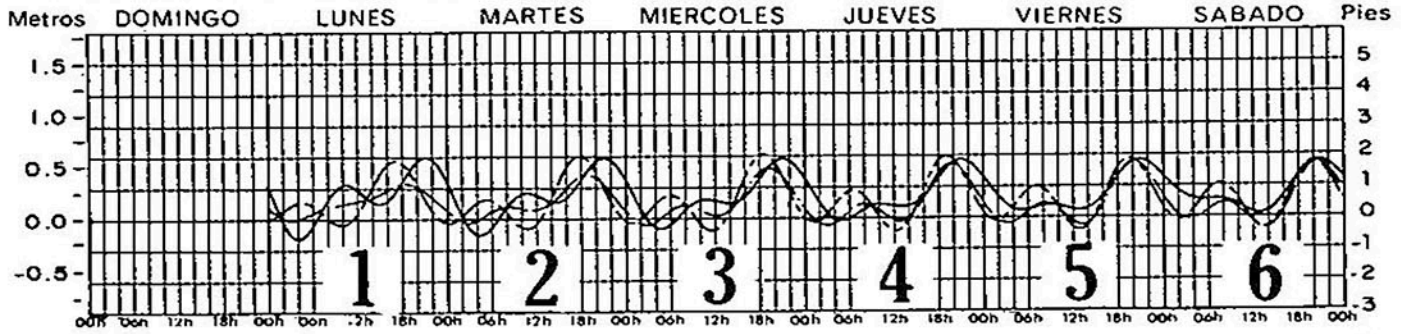


# ABRIL 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.



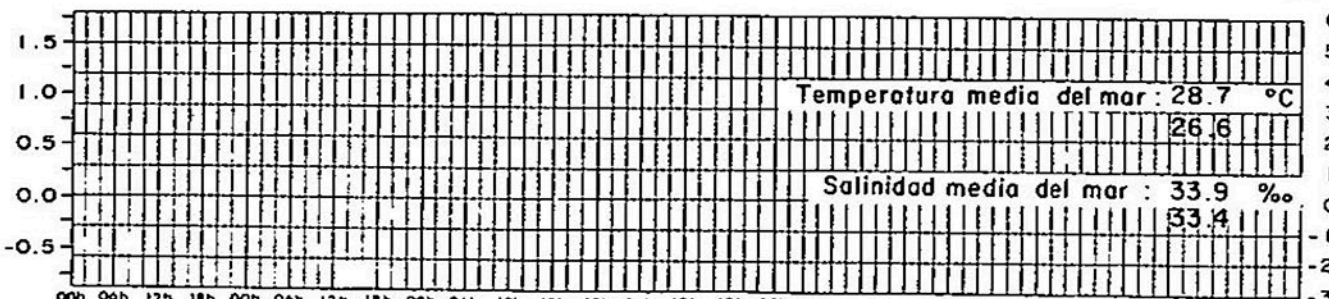
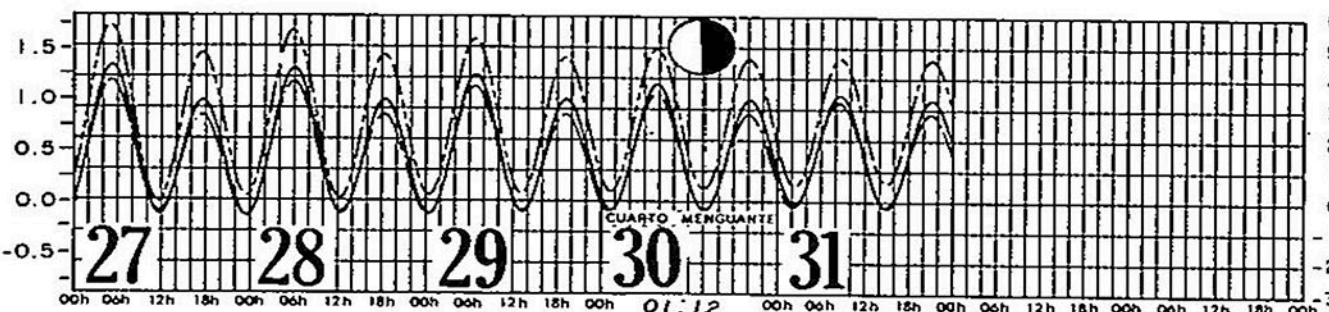
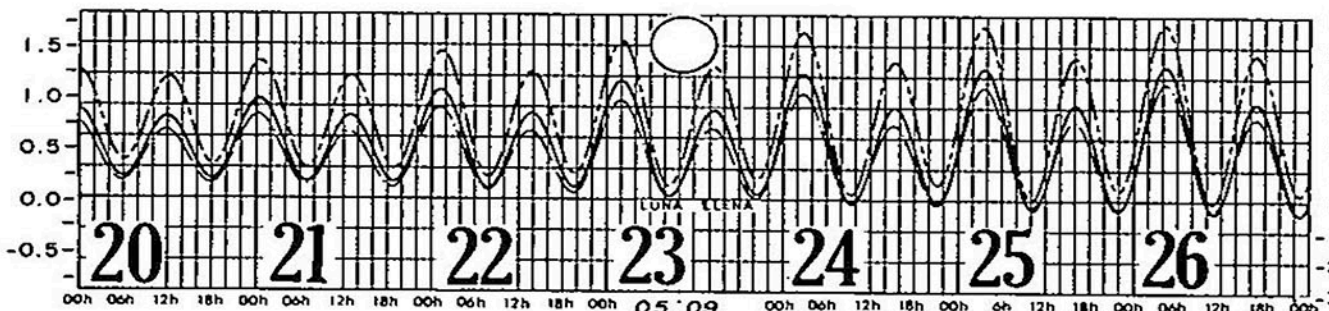
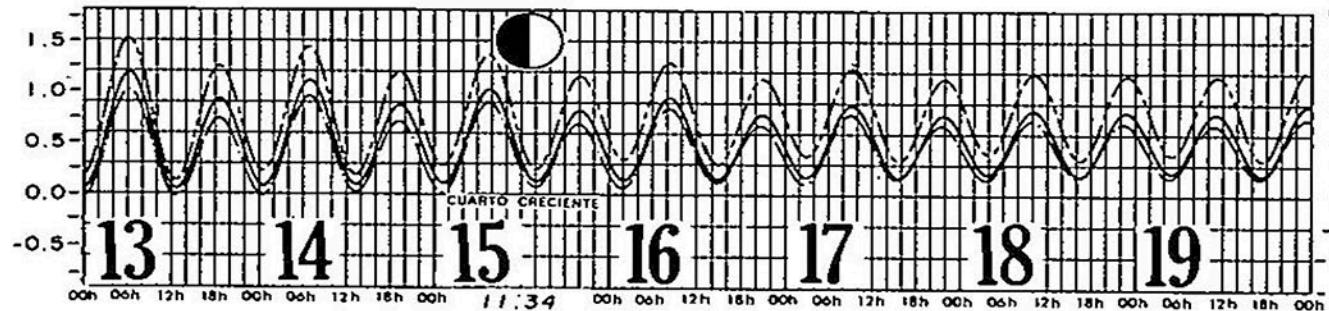
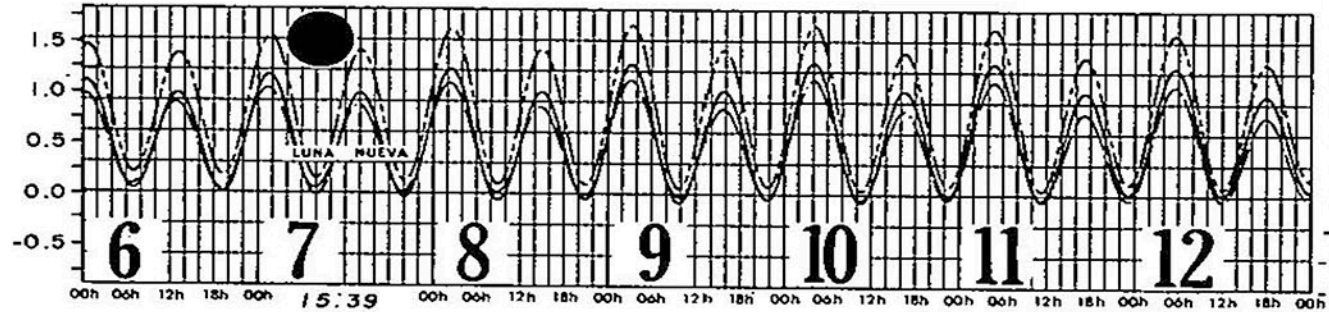
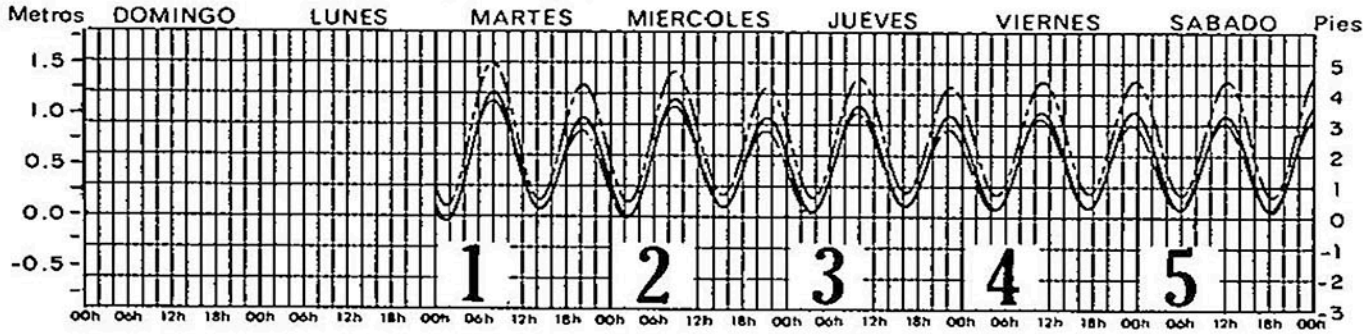


# OCTUBRE 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

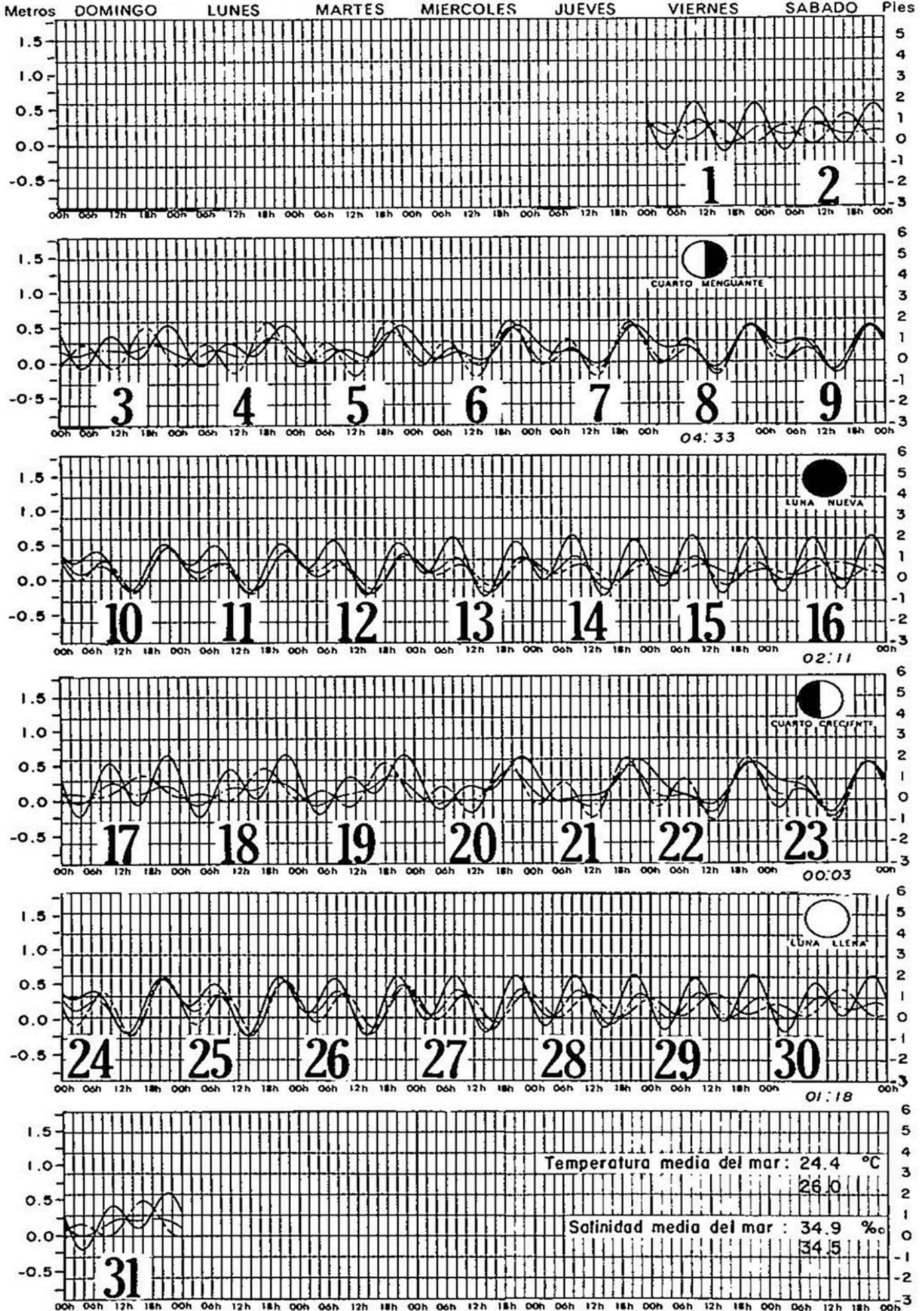


# MARZO 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

Temperatura media del mar: 24.4 °C

26.0

Salinidad media del mar: 34.9 ‰

34.5



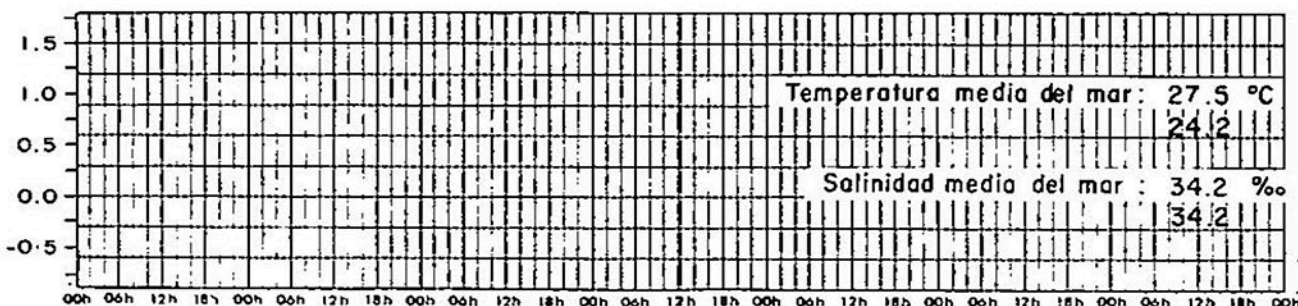
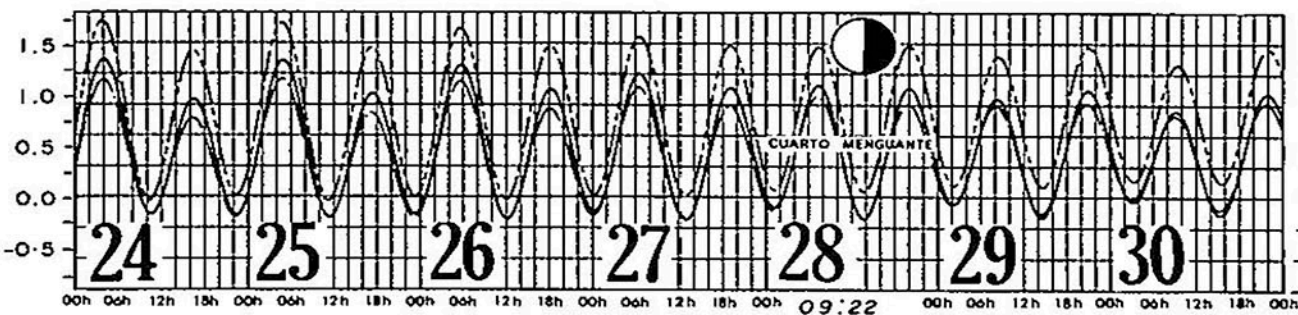
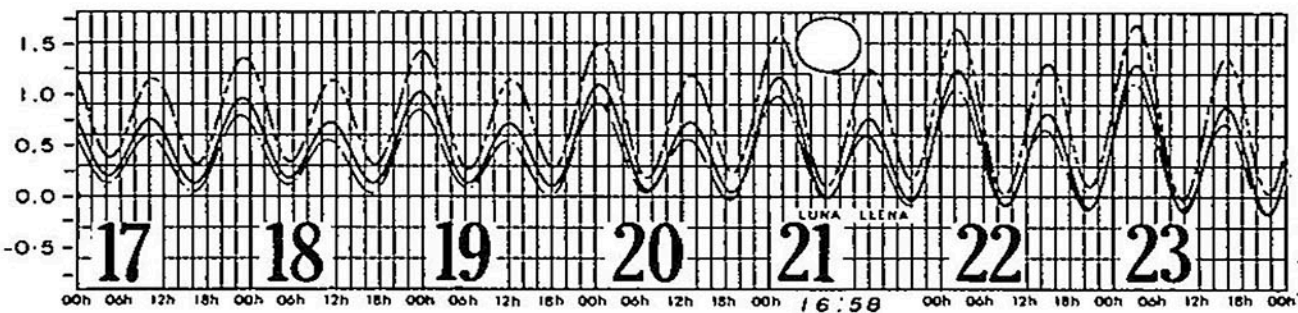
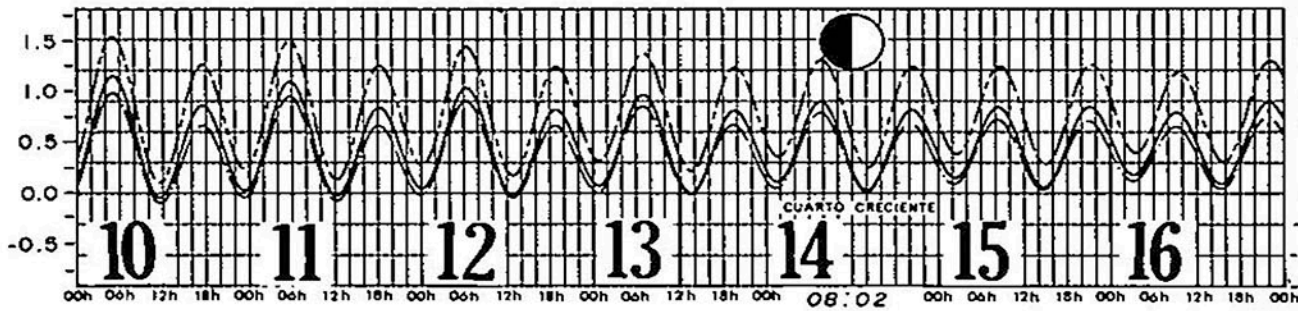
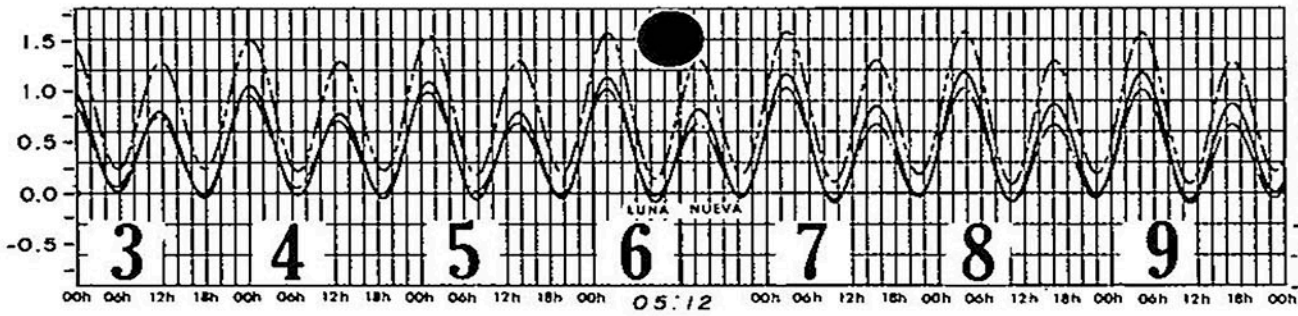
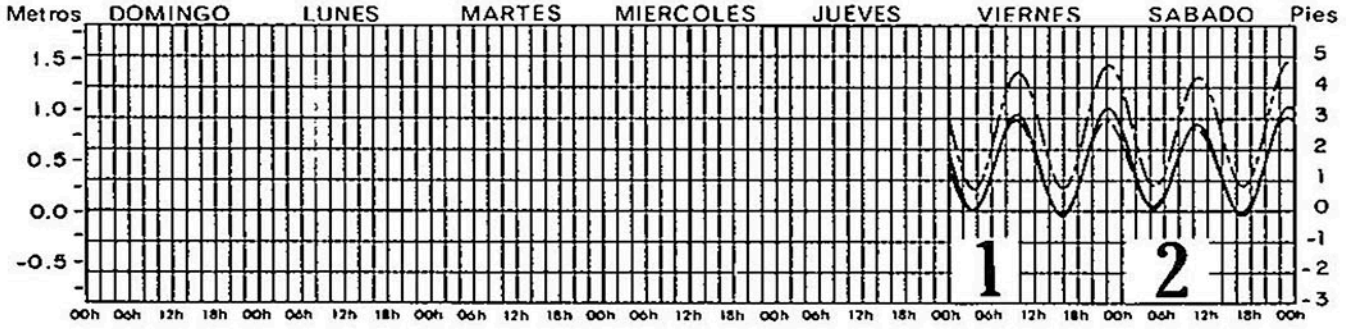


# NOVIEMBRE 1991

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS



INSTITUTO DE GEOFISICA, U.N.A.M.



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA: N.B.M.I.

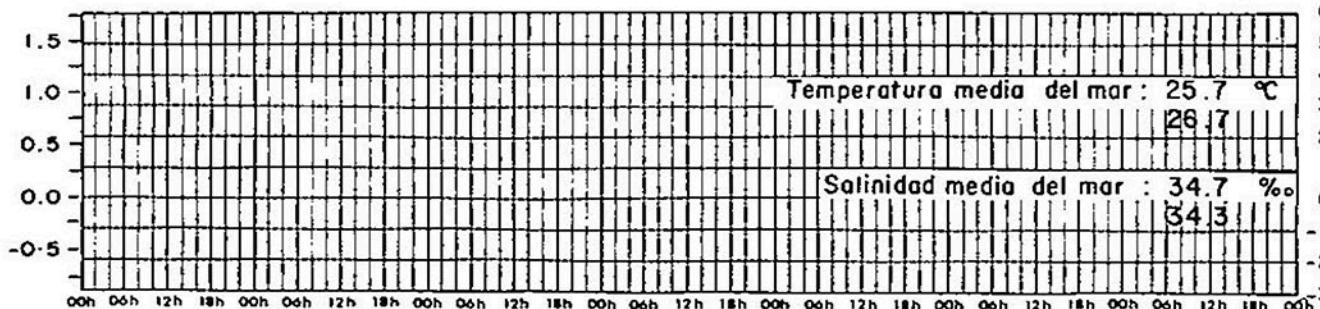
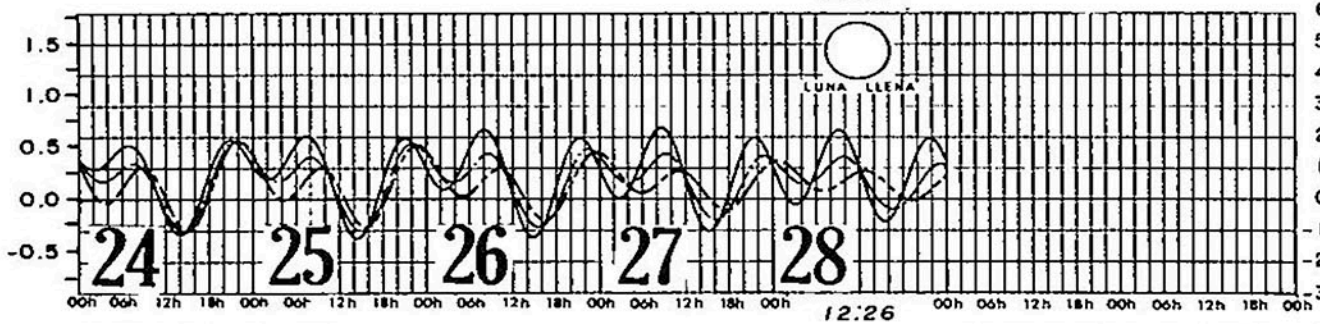
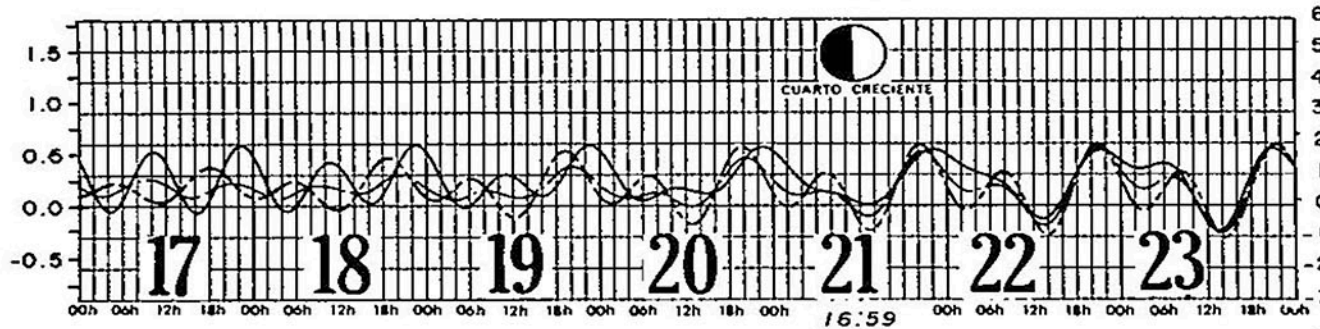
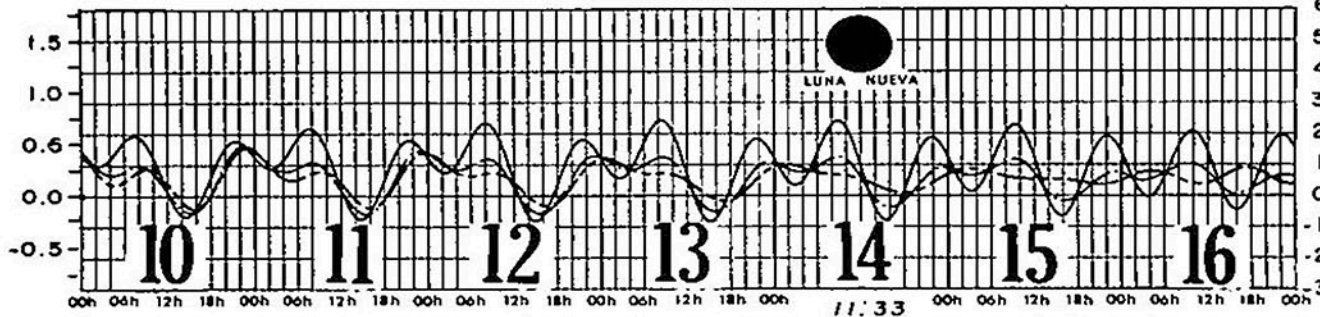
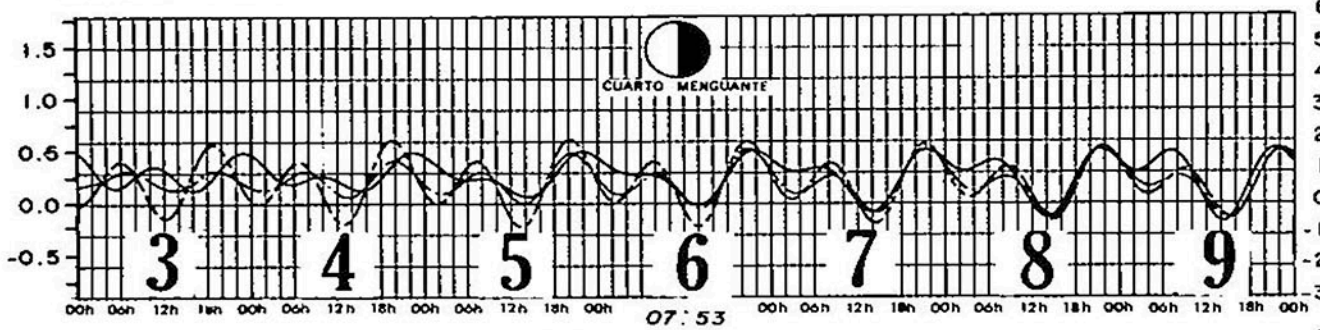
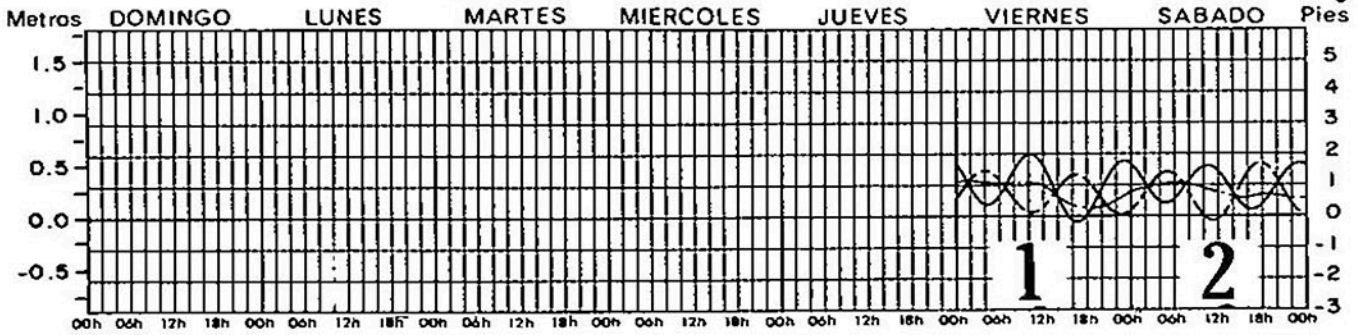


# FEBRERO 1991

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.



INSTITUTO DE GEOFISICA, U.N.A.M.



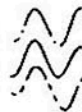




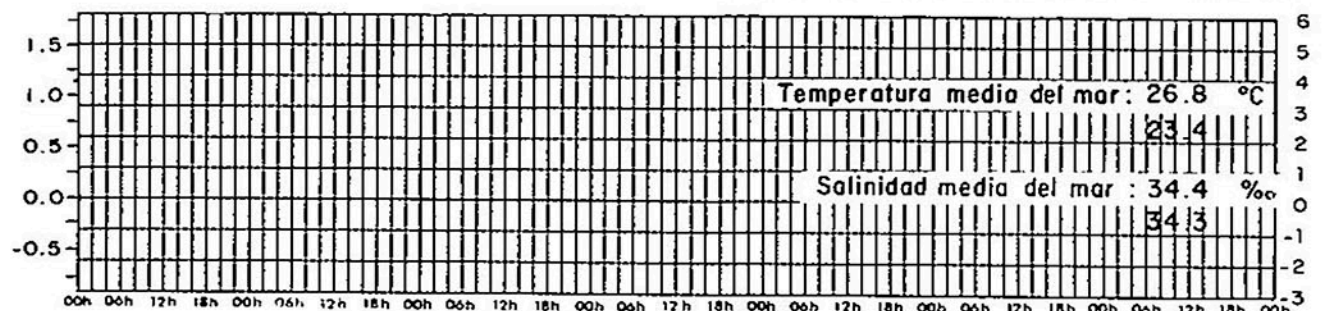
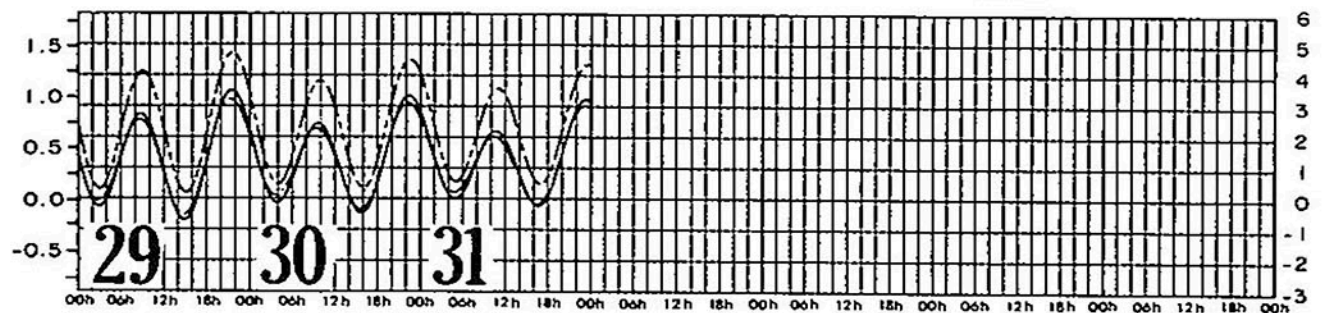
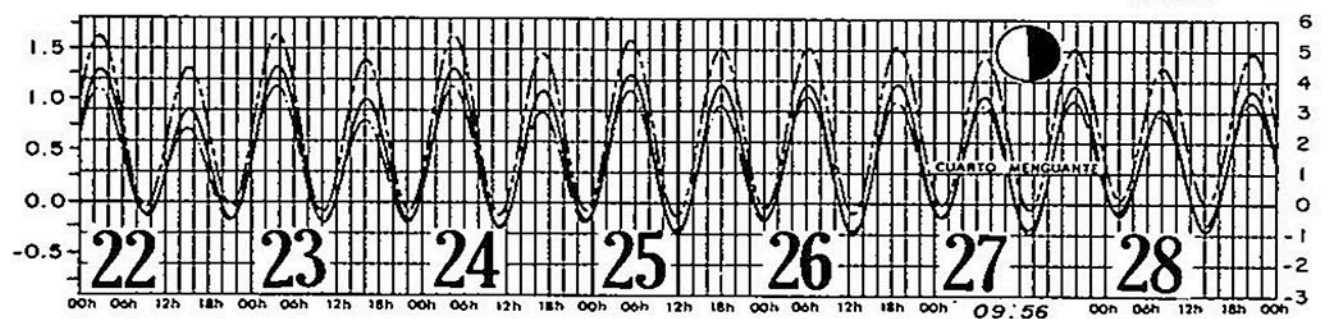
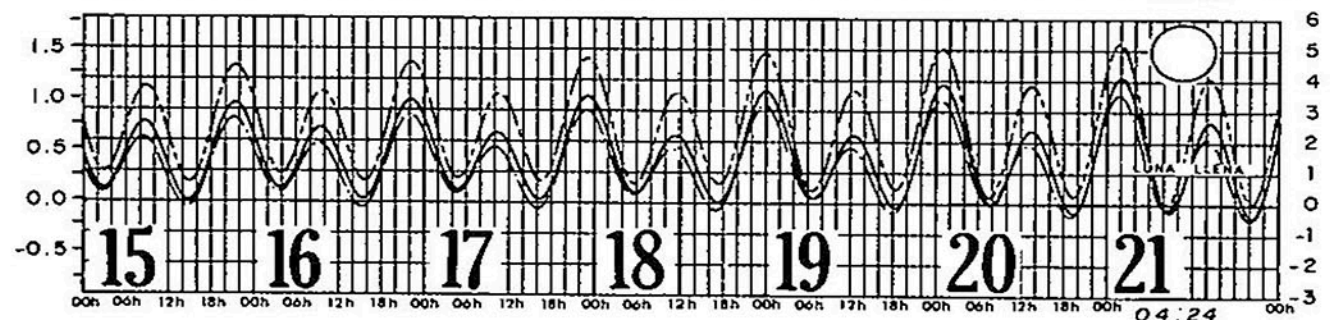
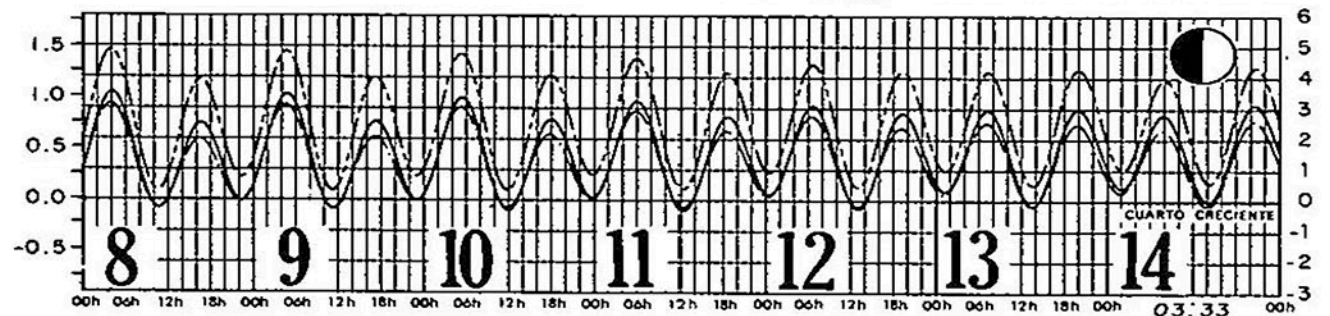
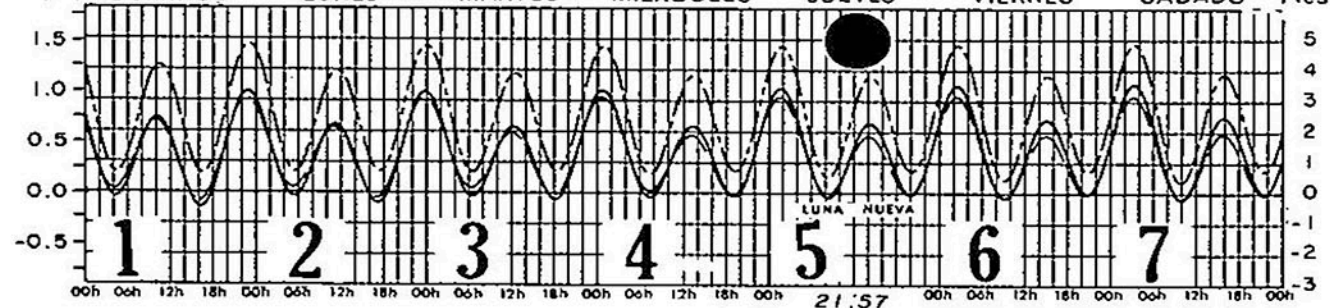
# DICIEMBRE 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

PTO. ANGEL, OAX.  
SALINA CRUZ, OAX.  
PTO. MADERO, CHIS



Metros DOMINGO LUNES MARTES MIERCOLES JUEVES VIERNES SABADO Pies



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.



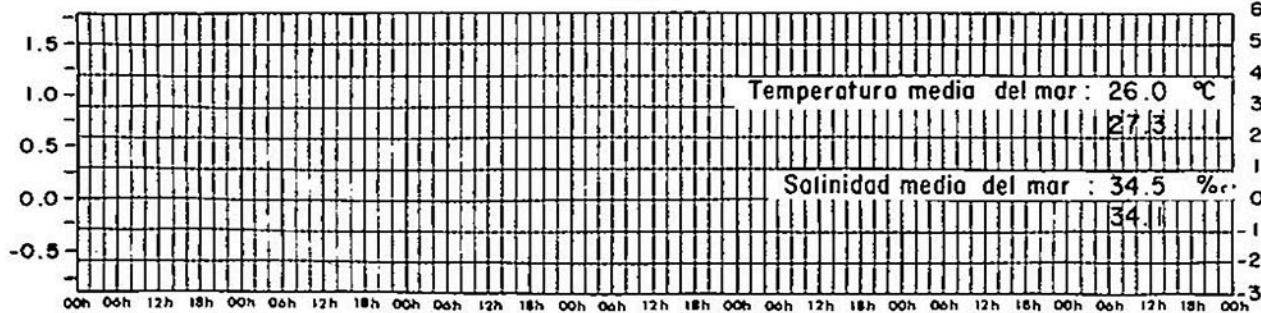
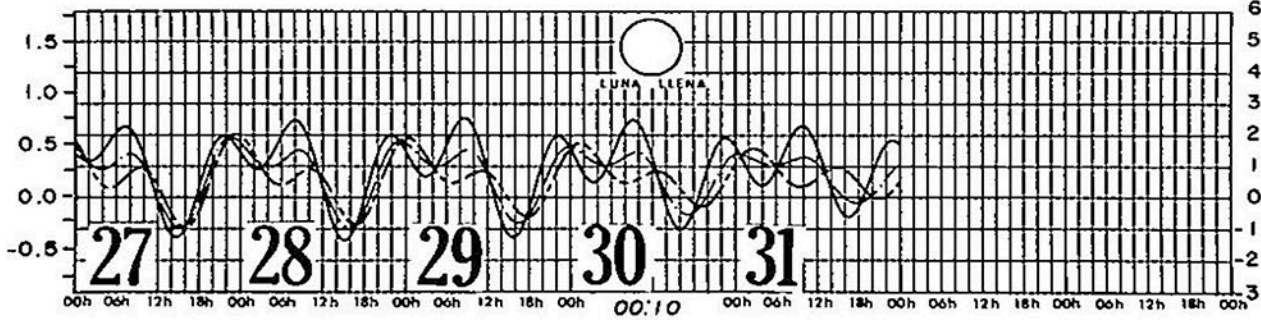
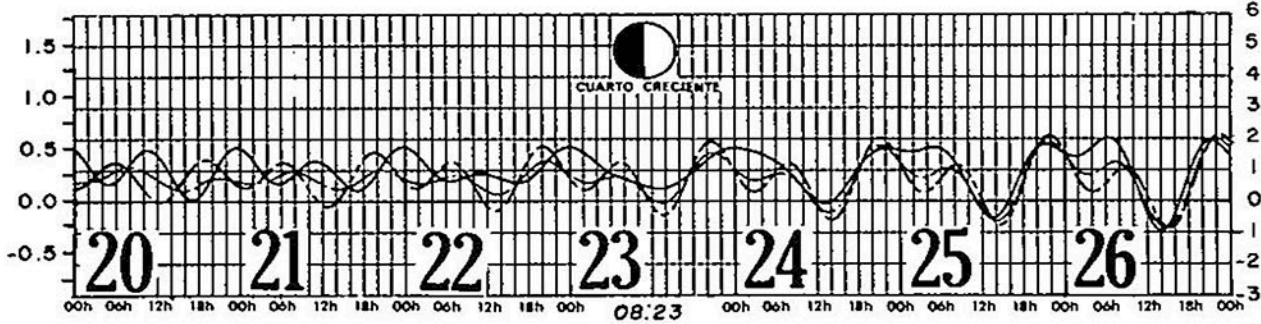
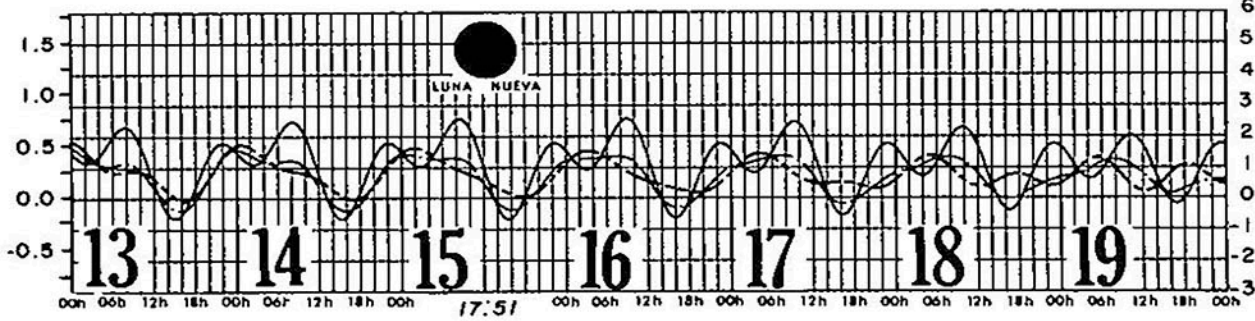
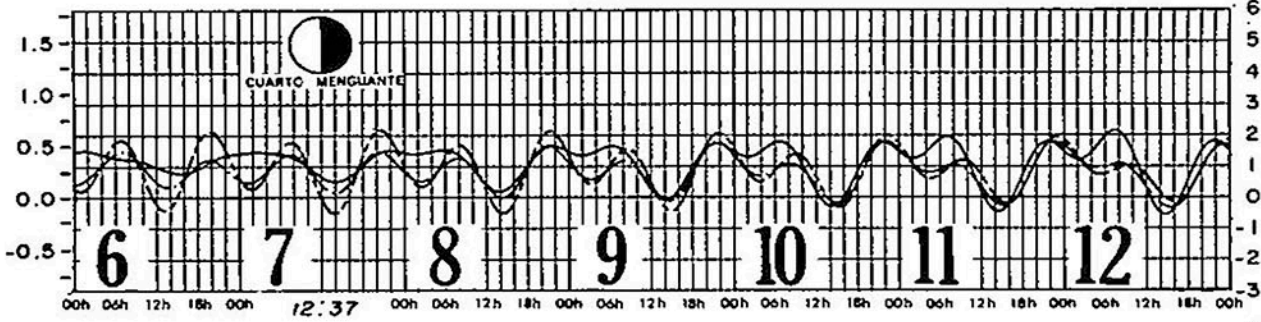
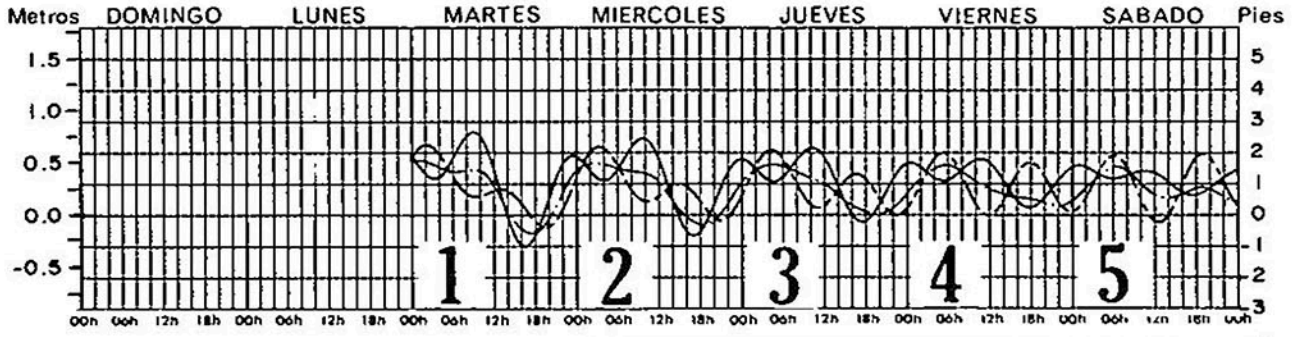
# ENEK 1991

INSTITUTO DE GEOFISICA, U.N.A.M.

MANZANILLO, COL.  
L. CARDENAS, MICH.  
ACAPULCO, GRO.

VK 775

C345



HORA DEL MERIDIANO 90° W

PLANO DE REFERENCIA N.B.M.I.

A2/3 4/2



**CALENDARIO GRAFICO DE MAREAS 1991**  
**Océano Pacífico**

ESTACIONES	PLANO DE REFERENCIA BAJO EL NIVEL MEDIO DEL MAR		TIEMPO
<b>REGION I</b>			
Ensenada, B. C.	2.7 pies	0.82 m	120°W
Guerrero Negro, B.C.S.	2.7 pies	0.82 m	120°W
San Carlos, B.C.S.	2.9 pies	0.88 m	105°W
Cabo San Lucas, B.C.S.	2.1 pies	0.64 m	105°W
Mazatlán, Sin.	2.0 pies	0.61 m	105°W
Puerto Vallarta, Jal.	1.8 pies	0.55 m	90°W
<b>REGION II</b>			
Bahía de los Angeles, B.C.	3.3 pies	1.01 m	105°W
Santa Rosalia, B.C.S.	1.2 pies	0.36 m	105°W
La Paz, B.C.S.	1.7 pies	0.52 m	105°W
Puerto Peñasco, Son.	7.0 pies	2.13 m	105°W
Guaymas, Son.	1.5 pies	0.46 m	105°W
Topolobampo, Sin.	2.0 pies	0.61 m	105°W
<b>REGION III</b>			
Manzanillo, Col.	1.3 pies	0.40 m	90°W
Lázaro Cárdenas, Mich.	0.9 pies	0.27 m	90°W
Acapulco, Gro.	1.0 pies	0.30 m	90°W
Puerto Angel, Oax.	1.6 pies	0.49 m	90°W
Salina Cruz, Oax.	1.9 pies	0.58 m	90°W
Puerto Madero, Chis.	2.3 pies	0.70 m	90°W

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Director

*Francisco Graffé Schmit*  
Responsable editorial

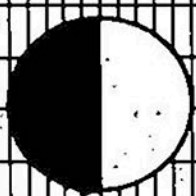
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# Calendario Gráfico de Mareas 1991



## OCEANO PACIFICO



SECRETARIA DE MARINA



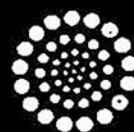
PUERTOS MEXICANOS



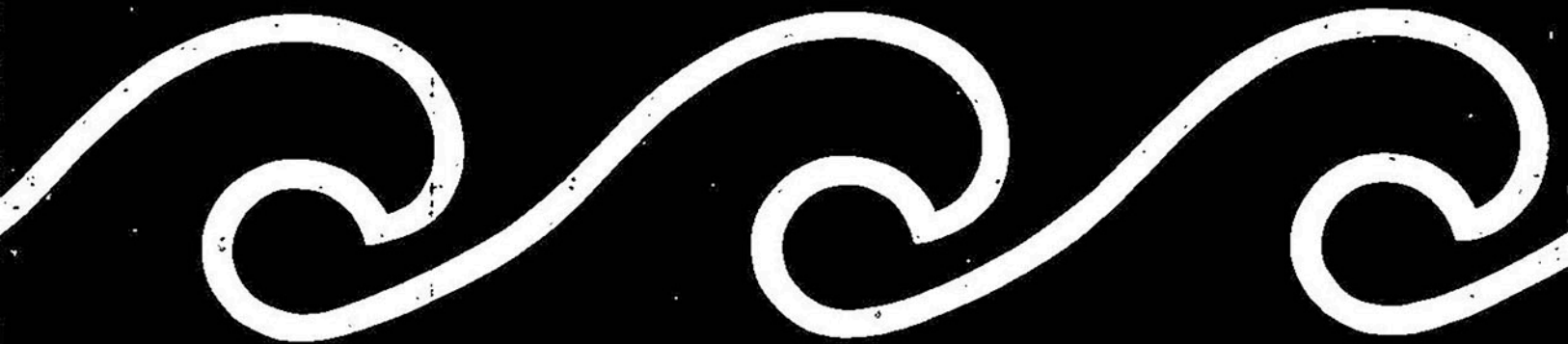
LAGUNA VERDE



FONATUR



CONACYT



Manzanillo, Col.

Bahía de los Angeles, B.C.N.

Ensenada, B.C.

Lázaro Cárdenas, Mich.

Santa Rosalía, B.C.S.

Guerrero Negro, B.C.N.

Acapulco, Gro.

La Paz, B.C.S.

San Carlos, B.C.S.