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(Août 1992 - juillet 1994)

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L'INSTITUT FRANÇAIS DE RECHERCHE SCIENTIFIQUE
POUR LE DÉVELOPPEMENT EN COOPÉRATION

CENTRE DE NOUMÉA

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Résumé

Pendant l'expérience TOGA/COARE, vingt-neuf bouées dérivantes de surface BODEGA ont été suivies par satellite pendant leur déplacement dans le pacifique tropical occidental, entre août 1992 et juillet 1994. Elles étaient équipées d'une minichaîne à thermistance dont les capteurs mesurent les variations de températures entre la surface et 20m. Le rapport détaille les procédures du traitement des données de positionnement et des données de température des mini-chaînes. Les données présentées consistent en des trajectoires des flotteurs, leur vitesse le long des trajectoires, les températures de surface et celles des 20 premiers mètres mesurées par les 5 capteurs de la chaîne.

Mots clés : Bouées dérivantes de surface. Trajectoires. Températures. Courants de surface. Expérience TOGA/COARE. Pacifique occidental.

Abstract

As part of the TOGA/COARE experiment, twenty nine BODEGA freely drifting drogued buoys were tracked by satellite in the western tropical Pacific from August 1992 to July 1994. These drifters were equipped with a mini-thermistor chain with sensor measuring temperatures between the surface and twenty meters. Details of position data processing as well as temperature data processing are presented. The data consist of buoy trajectories, velocity along trajectories, sea surface temperature and temperature of the surface layer as measured by the five sensors of the thermistor chain.

Key words : Surface drifters. Trajectories; Near surface temperature. Surface currents. TOGA/COARE experiment. Western Pacific.

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1 - Introduction

Ce rapport présente les résultats obtenus par les mesures de bouées dérivantes de surface munies d'une ancre flottante, suivies par satellites ARGOS. Elles ont été déployées dans l'océan Pacifique occidental pendant l'expérience TOGA-COARE entre août 1992 et février 1993. Toutes les bouées dérivantes ont été déployées à partir de campagnes océanographiques menées par l'ORSTOM Nouméa sur le N.O. *Le Noroit* : Six en août pendant la campagne SURTROPAC 17 le long du méridien 165°E (du Penhoat et al, 1993), six pendant la campagne COARE-156 en septembre 1992 le long du méridien 156°E (Rual et al, 1995), et 17 pendant la campagne COARE-POI (Période d'Observations Intensives) entre décembre 1992 et février 1993 (Delcroix et al, 1993). D'autres bouées dérivantes de surface appartenant à la SCRIPPS (responsable Pr Niiler) furent aussi déployées pendant ces mêmes campagnes. Le comportement de ce type d'instrument a été analysé par Niiler et al (1987 et 1995).

Les objectifs de l'expérience TOGA COARE (pour Coupled Ocean-Atmosphere Response Experiment) étaient de décrire et de comprendre, dans le réservoir d'eaux chaudes du Pacifique ouest (Webster et Lukas, 1992):

- les principaux processus responsables du couplage entre l'océan et l'atmosphère
- les principaux processus atmosphériques qui organisent la convection,
- la réponse océanique aux forces atmosphériques (vent et flux de chaleur à l'interface air-mer),
- les interactions à échelles multiples qui étendent l'influence océanique et atmosphérique de la région du réservoir d'eaux chaudes à d'autres régions et vice-versa.

Ce programme était composé de trois composantes : une atmosphérique, une océanique et une étudiant l'interface air-mer. Il se décomposait en quatre types d'opérations, à savoir une série d'études pilotes, des études spécifiques de modélisation, un ensemble d'expériences sur zone réparties en une période de suivi accru 1990-1993 et une Période d'Observations Intensives de novembre 1992 à février 1993. Plus spécifiquement, le déploiement de bouées dérivantes de surface s'inscrit dans la composante océanique de COARE et doit permettre de décrire et comprendre la structure de la variabilité des flux de chaleur et de quantité de mouvement de l'océan superficiel à des échelles de temps allant de la journée au mois.

2 - Les bouées BODEGA

Ces bouées font partie d'un ensemble de 74 bouées déployées dans l'océan Pacifique tropical dans le cadre du TOGA/WOCE Surface Velocity Programme. Elles ont été développées par le LODYC, Université P et M Curie en collaboration avec l'IFREMER. La fabrication en a été confiée à la société SERPE-IESM de Guidel (56). La bouée comprend (figure 1) : un petit corps de surface où se trouve l'électronique, une petite thermistance, les piles et l'émetteur ARGOS permettant la transmission des données et la localisation par les systèmes embarqués sur satellites, un flotteur de subsurface situé vers 4-5 mètres de profondeur et une ancre flottante lestée, de type réflecteur radar, centrée à 15 mètres d'immersion. Les différents éléments sont reliés par un câble électro-porteur armé sur lequel sont insérées 5 thermistances situées aux profondeurs de 2m, 5m, 8m, 12m et 20m. Les indications de présence d'ancre flottante sont basées tant sur un capteur qui indique la verticalité de la bouée de subsurface que sur des visualisations des cycles diurnes de température aux différents niveaux échantillonnés. L'erreur sur la dérive des bouées n'excède pas 3cm/s lorsque l'ancre flottante est présente.

Les 5 thermistances de la chaîne donnent des températures moyennes horaires (une mesure tous les 1/4 d'heure). L'étalonnage des capteurs a été fait avant déploiement au laboratoire à Nouméa et pour 5 d'entre elles sur le navire, avant déploiement. La précision des capteurs est estimée à 0.03°C.

Les déploiements ont été effectués le long des deux longitudes 165°E et 156°E (figure 2 et tableau 1).

1. Six bouées furent déployées en août 1992 le long de 165°E pendant la campagne SURTROPAC 17 entre 1°S et 4°N, dans un flux de surface faible vers l'est au nord de l'équateur et dans un flux faible vers l'ouest au sud (bouées n° 2675, 2676, 2677, 2678, 2679, 2680).

2. Six bouées ont été déployées lors de la campagne COARE156-3 en septembre 1992, le long du méridien 156°E entre 0.5°S et 6°N (bouées n° 2681, 2682, 2684, 2685, 2686, 2687).

3. Sept bouées ont été déployées en décembre 1992 lors de la campagne COARE-POI entre 2°S et 4°N, neuf au mois de janvier 1993 et la dernière en février (n° 2683, 2688, 2689, 2690 et n° 17617 à 17629).

Deux bouées n'ont pas fonctionné dès le déploiement :

- l'une (n° 17618) a sans doute pris l'eau rapidement due à un défaut d'étanchéité de la sphère contenant l'électronique,
- l'autre (n° 2689) a été endommagée au déploiement par l'appareillage SEASOAR tracté par le navire.

La bouée dérivante n°2688 n'a émis que très peu de positions, ce qui est certainement dû à une défaillance de l'émetteur.

3 - Données

Les bouées sont suivies par Service ARGOS à Toulouse, France, qui effectue le calcul des positions brutes dont la meilleure précision est de l'ordre de 200m. Les premiers traitements se font conjointement au LODYC, Paris, et au Drifter Data Assembly Center (DAC), AOML, Miami. Les vitesses irréalistes supérieures à 200cm/s sont éliminées. Les positions et des vitesses sont alors obtenues en interpolant les données toutes les 6 heures par la méthode de Krigeage (Hansen et Herman, 1989). Les données de température de la minichaîne de thermistances sont traitées à Paris. Les deux fichiers de données ont été ensuite comparés, validés et corrigés au centre ORSTOM de Nouméa. Par ailleurs, les données des bouées BODEGA transitent via le SMT (Service Mondial de Télécommunication) après validation des premières mesures. Les bouées dérivantes ont alors un numéro OMM (voir tableau I). Ce travail de validation et de raccordement au SMT a été effectué par Pierre Blouch, antenne Météo-Marine de Météo France, IFREMER, Brest.

Les flotteurs de numéros de série 2675 à 2690 émettent en mode "économique", c'est à dire qu'ils émettent en continu pendant 24 heures sur une période de 72 heures. Ceux de numéros de série 17617 à 17629 sont programmés pour émettre en continu pendant les deux premiers mois après leur déploiement, puis passent en mode d'émission un jour sur trois, comme la première série.

Des comparaisons avec des mesures de températures mesurées par d'autres plates-formes ont été effectuées chaque fois que possible, c'est à dire lorsque les bouées dérivantes se sont rapprochées suffisamment près des mouillages TAO ou IMET (mouillage Woods Hole déployé pendant la période d'observation intensive de

COARE (COARE IOP). Ces comparaisons nous permettent de faire les constatations suivantes :

- Le capteur à 5 m de profondeur se trouve situé dans la boule noire de subsurface. Ce montage du constructeur entraîne un biais important du maximum de température surtout par temps calme et ensoleillement important. L'amplitude du cycle diurne est alors plus important à 5m que pour le capteur à 2m et peut dépasser 1°C. Il faut donc utiliser ce capteur avec précaution et sans doute ne pas garder les valeurs diurnes.

- Les comparaisons des données du capteur situé à deux mètres de profondeur avec ceux des mouillages ne permet pas de déceler un biais pour ce capteur. Les comparaisons faites pour le capteur situé à 20 mètres indiquent que ce capteur peut être parfois soumis à des fluctuations importantes de températures (de l'ordre de 0.4°C) dues à la présence d'ondes internes.

Durant leur séjour dans l'eau, les capteurs peuvent présenter des dérives électroniques. Elles sont occasionnées par des micro fissures dues par exemple à des morsures de poissons. Ces dérives peuvent être estimées pendant la nuit en faisant des inter-comparaisons entre les différents capteurs, et avec le capteur de la sphère de surface. Ce type de dérive peut évoluer de façon aléatoire dans le temps. Ce stade du traitement nécessite donc une visualisation de chaque cycle individuel de 24h. Nous avons considéré que cette dérive varie peu sur 24h et une interpolation linéaire de cette dérive est effectuée entre deux corrections ponctuelles. Quand ces corrections sont trop importantes, les mesures effectuées par ce capteur ne sont plus considérées comme crédibles et les données ont donc été retirées. De même, lorsque la bouée dérivante perd son ancre flottante, les données de températures ne sont plus exploitables. Les corrections proposées après visualisation de chaque cycle diurne sont indiquées avec les figures pour chaque flotteur. Ne sont présentées que les mesures de températures dont les corrections, si nécessaires, ont été jugées acceptables

4 - Remerciements

Nous tenons à remercier Maurice du Chaffaut, ingénieur au LODYC, pour ses conseils et son suivi lors de la fabrication des bouées BODEGA, ainsi que Jacques Grelet, électronicien à Nouméa, pour son aide lors de l'étalonnage des capteurs. Le concours de Pierre Blouch pour la validation et le raccordement au SMT a été très apprécié. De même, l'aide que nous a apportée Mayra Pazos du D.A.C., A.O.M.L., Miami, nous a été fort précieuse. Bob Weller et Steve Anderson nous ont permis l'accès aux données du mouillage de WoodsHole afin de vérifier le comportement des capteurs de nos flotteurs quand ils se sont approchés suffisamment près du mouillage. Toutes les bouées dérivantes ont été déployées lors des campagnes océanographiques à bord du N.O. Le Noroît. Le financement de cette opération a été fourni par l'IFREMER par les contrats IFREMER/ORSTOM n°911430012 et n° 921430051.

5 - Résumé des figures

La série de figures ci après présente un aperçu des données des bouées BODEGA. Pour chaque bouée est présentée la trajectoire durant la vie de la bouée, avec un résumé de fonctionnement de la chaîne à thermistance. (notamment les corrections apportées aux différents capteurs). La vitesse de déplacement de la bouée est ensuite tracée ainsi que les composantes Sud-Nord et Ouest-Est. Enfin l'évolution temporelle de chaque capteur est présentée.

6 - Extended abstract

BODEGA drifters have been developed in a collaboration with LODYC, Université Pierre et Marie Curie, Paris, IFREMER, Brest and ORSTOM Nouméa. Seventy-nine BODEGA drifters have been deployed in the tropical Pacific ocean between August 1989 and February 1993, as part of the TOGA/WOCE Surface Velocity Programme.

A schematic view of a BODEGA drifter is presented in Fig. 1. It is composed of a surface hull with inside an ARGOS antenna, a transmitter, the electronic and batteries. A subsurface float is situated at 4 - 5m deep and a TRISTAR drogue is centered at 15m. BODEGA drifter is equipped with a drogue sensor and with a mini-thermistor chain with five sensors at 2m, 5m, 8m, 12m and 20m. These sensors transmit hourly temperature measurements with a 15mn sampling rate. They have an estimated precision of 0.03°C. There is also a buoy hull temperature sensor with a 2-hr sampling rate which is less accurate than other sensors. Pre-deployment calibration were made in laboratory at ORSTOM in Nouméa by measuring temperature in a stable thermostated bath with a precision thermometer.

Six BODEGA drifters were deployed along 165°E during SURTROPAC 17 cruise in AUGUST 1992, between 1°S and 4°N (du Penhoat et al, 1993). Six were deployed between 0°5S and 6°N along 156°E during COARE156-3 cruise September and October 1992 (Rual et al, 1995). During COARE-POI cruise (Delcroix et al, 1993), seven drifters were deployed in December 1992, nine in January 1993, and one in February, between 2°S and 4°N along 156°E. See Table 1. Sixteen drifters (PTT n° from 2675 to 2690) transmitted to ARGOS on a 24 hour period out of every 72 hour period. Thirteen (PTT n° from 17617 to 17629) transmit continuously for two months after deployment then switch to the « economical mode », transmitting continuously 24 hour period out of 72 hour period.

Service ARGOS in Toulouse, France, provided the raw location computation that had the best estimate accuracy of 200m. The first data processing was done at LODYC, Université Pierre et Marie Curie, Paris and at the Drifter Data Assembly Center at AOML, Miami. The raw data are despiked by removing unacceptable high velocity in excess of 200cm/s. Positions and current speeds are then interpolated using a Kriegering procedure to six hour intervals. Corrections and final validation procedure are done at ORSTOM in Nouméa for temperature data.

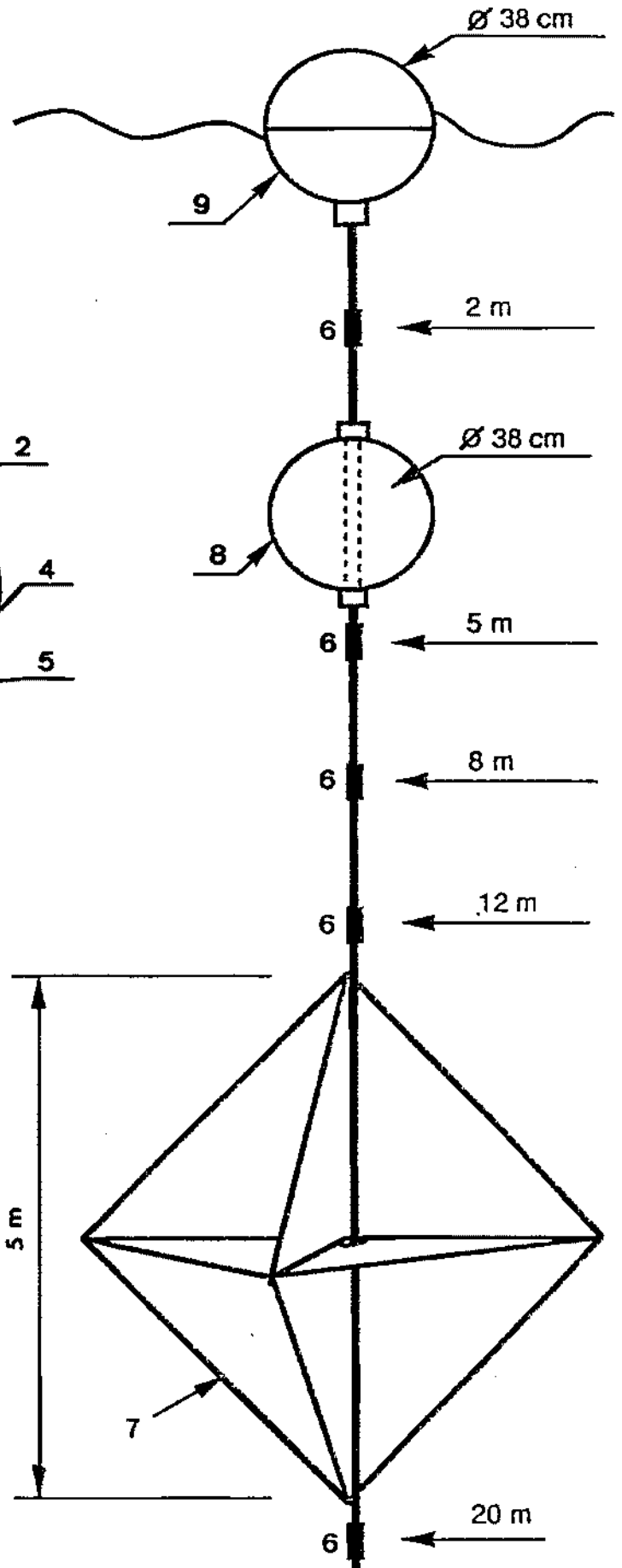
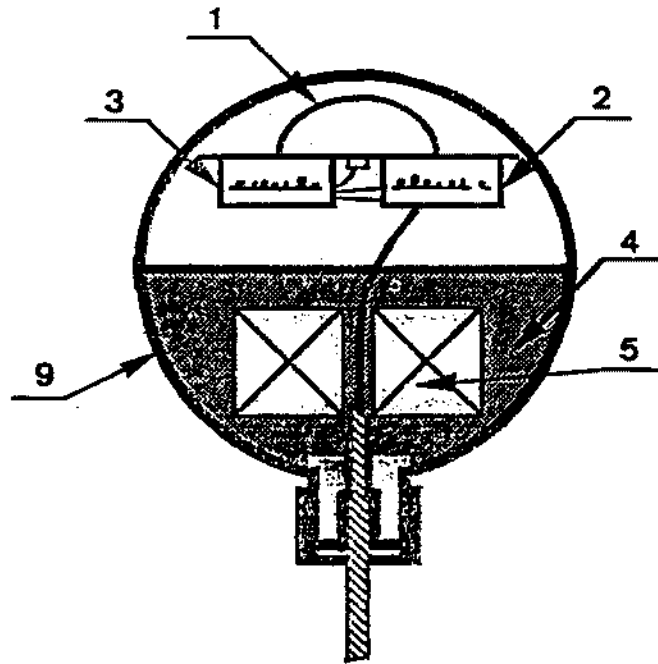
Comparisons with other temperature data were made when a drifter flow sufficiently closed to a TOGA-TAO array or near the Woods Hole mooring deployed during the COARE Intensive Observation Period in the western Pacific (courtesy of Bob Weller and Steve Anderson). These comparisons have shown that the 5m sensor that is situated in the black subsurface float can have important biases during calm weather and sunny day with a more important amplitude than at the 2m sensor, due to the influence of the float. Caution should be applied when using daytime values of 5m sensor. There is no visible bias for the other sensors.

Each individual 24 hour temperature cycle has been visualized to detect small electronic or sensor drift which will vary from sensor to sensor. The correction has been estimated by intercomparing the different sensors at night, and are applied as long as they are small. These corrections are given with time-series plots of temperature for each individual drifter.

7 - Références

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BOUEE BODEGA



- 1 - Antenne ARGOS
ARGOS antenna
- 2 - Émetteur ARGOS
ARGOS transmitter
- 3 - Électronique. *Electronic*
- 4 - Mousse. *Foam*
- 5 - Batteries. *Batteries*
- 6 - Capteurs de température
de la chaîne à thermistance
Thermistor sensors
- 7 - Ancre flottante. *Drogue*
- 8 - Flotteur de subsurface
Subsurface float
- 9 - Flotteur de surface.
Surface float

Figure 1. Schéma d'une bouée dérivante BODEGA
Schematic representation of a BODEGA surface drifter

N°	N°	date et position de déploiement				Date et position de fin de vie				Nb de jours			
		ARGOS	QMM	M	J	An	Latitude	Longitude	M		J	An	Latitude
2675	0		8	13	92	0.01°S	165.83°E	10	30	92	6.62°S	156.17°E	78
2676	52891		8	24	92	0.96°S	164.76°E	5	27	93	1.77°S	160.88°E	276
2677	52892		8	21	92	4.02°N	165.00°E	9	27	93	4.97°N	172.69°E	402
2678	52889		8	14	92	4.00°N	165.00°E	12	11	93	14.60°N	139.52°E	484
2679	52890		8	14	92	2.01°N	165.04°E	7	8	94	18.64°N	159.73°E	693
2680	52893		8	22	92	1.01°N	164.91°E	4	13	93	1.09°S	169.48°E	234
2681	52894		9	26	92	0.47°S	155.94°E	10	9	92	1.47°S	149.82°E	13
2682	52895		9	25	92	0.50°S	156.00°E	12	1	92	4.90°S	151.02°E	67
2684	52571		9	24	92	3.00°N	156.03°E	2	25	93	1.60°N	173.81°E	154
2685	52572		9	23	92	4.51°N	156.10°E	11	17	92	3.21°N	165.02°E	55
2686	52573		9	23	92	5.99°N	156.04°E	2	1	93	10.77°N	173.70°E	131
2687	52574		9	25	92	1.62°N	155.96°E	11	19	92	0.12°S	159.67°E	55
2683	52586		1	21	93	1.75°S	156.1°E	3	30	93	0.56°S	159.46°E	67
2688	52587		1	22	93	2.02°N	156.11°E						66
2689						0°	156°E						0
2690	52588		1	22	93	3.00°N	156.1°E	11	24	93	18.85°N	121.35°E	306
17617			12	18	92	1.92°S	156.13°E	12	21	92	1.79°S	156.46°E	3
17618	52575		12	18	92	0.00°	156.07°E	6	19	93	1.38°S	171.64°E	183
17619	52580		12	31	92	2.00°N	156.03°E	1	2	94	22.90°N	123.94°E	366
17620	52581		1	1	93	0.05°N	156.00°E	5	31	94	17.43°S	161.19°E	456
17621	52583		1	19	93	1.00°S	156.10°E	11	16	93	1.72°S	153°E	301
17622	52589		2	8	93	0.02°N	156.01°E	7	3	93	8.55°N	151.91°E	145
17623	52576		12	19	92	2.00°N	156.06°E	7	5	93	16.87°N	142.70°E	198
17624	52577		12	20	92	3.99°N	156.01°E	9	21	93	14.70°N	134.67°E	275
17625	52578		12	21	92	1.05°N	156.09°E	3	23	93	0.28°N	157.65°E	91
17626	52584		1	18	93	1°N	156.01°E	8	30	93	3.87°N	125.56°E	224
17627	52582		1	2	93	2.00°S	156.01°E	6	8	93	2.64°S	150.89°E	216
17628	52585		1	19	93	2.50°S	156.09°E	10	30	93	1.62°S	142.16°E	284
17629	52579		12	22	92	1°S	156.00°E	7	1	93	1.36°N	172.93°E	191

Table 1 . Dates et positions de déploiement et de fin de vie des bouées dérivantes BODEGA. Nombre de jours de fonctionnement
Launch and end date s and positions of BODEGA surface drifters.

BODEGA drifters (1992-1994)

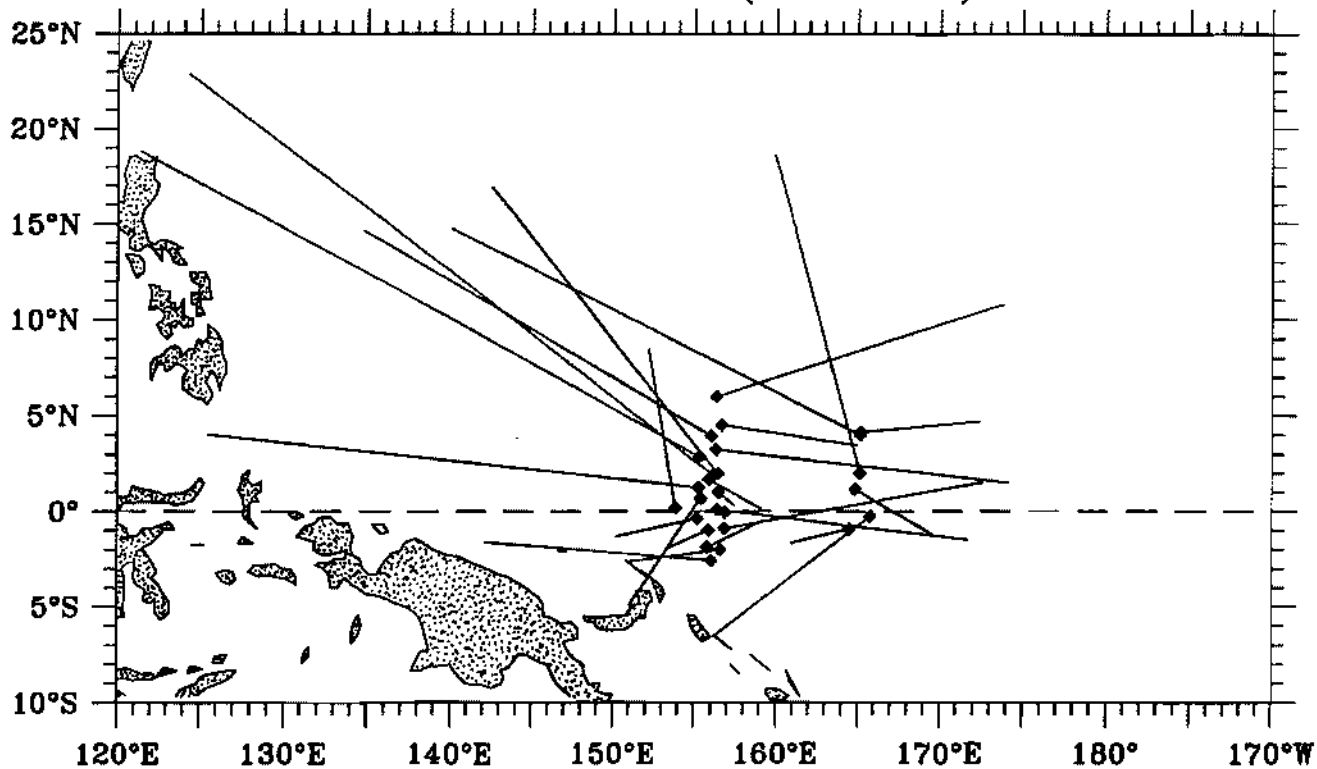
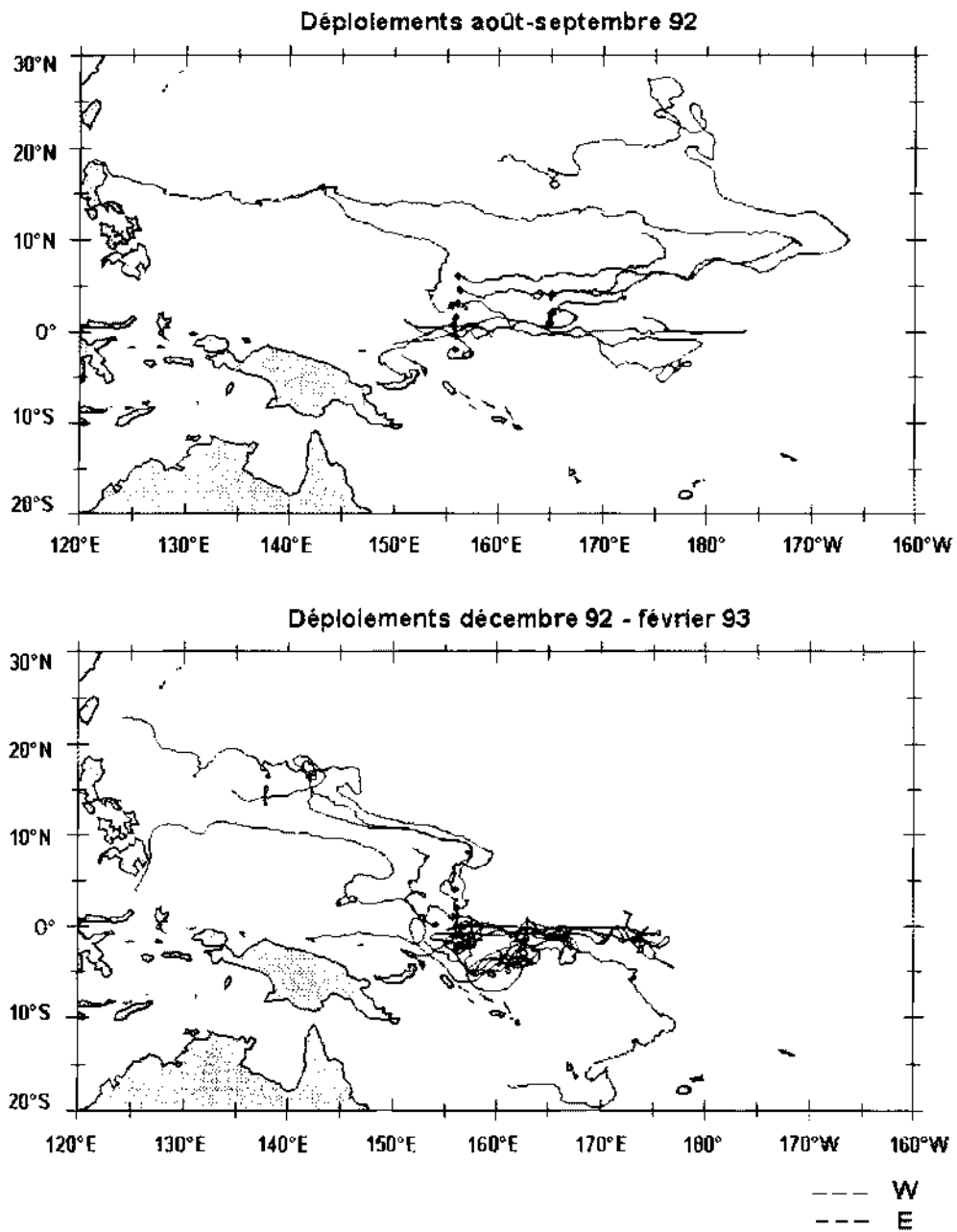


Figure 2 . Positions de déploiement (losanges) et déplacement total des flotteurs BODEGA (août 1992 - août 1994)
Launching position (diamonds) and total displacement for all BODEGA drifters (August 1992 - August 1994)

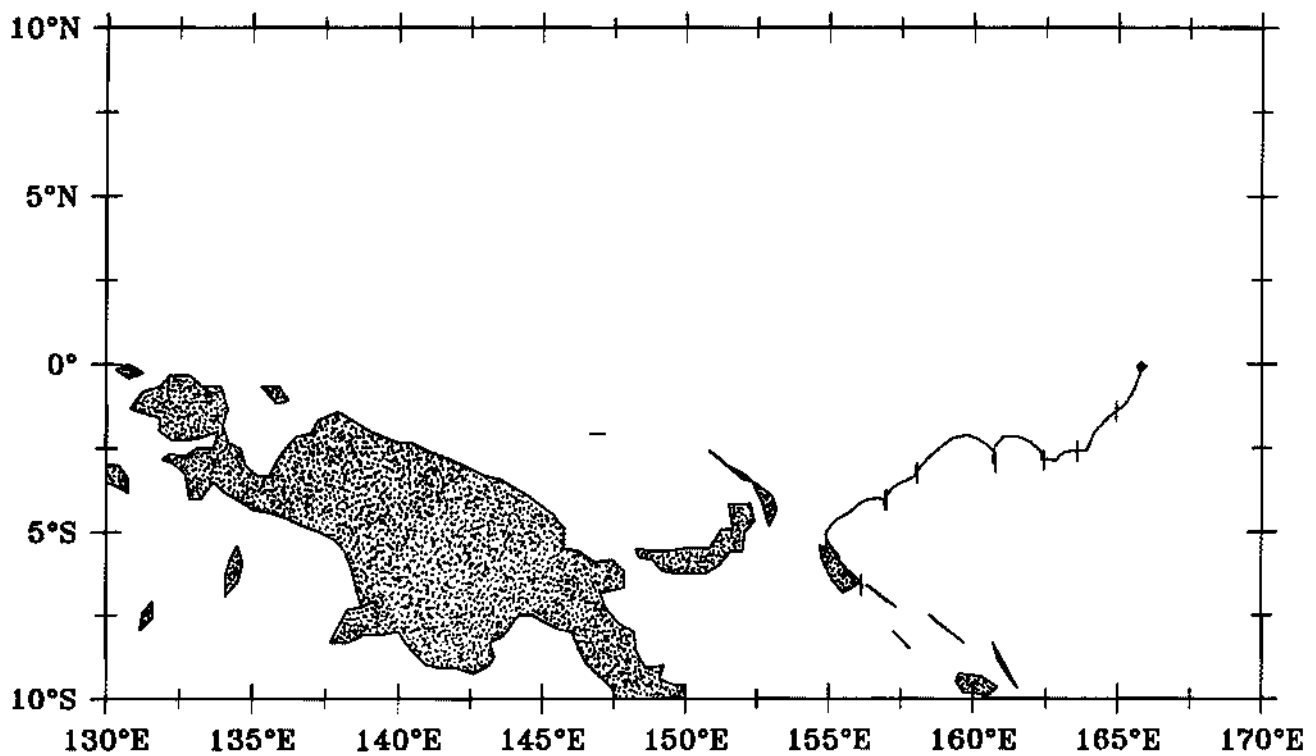


**Figure 3. Trajectoires de toutes les bouées dérivantes BODEGA
 déployées entre août 1992 et février 1993**
*Trajectories of BODEGA drifters launched
 between August 1992 and February 1993*

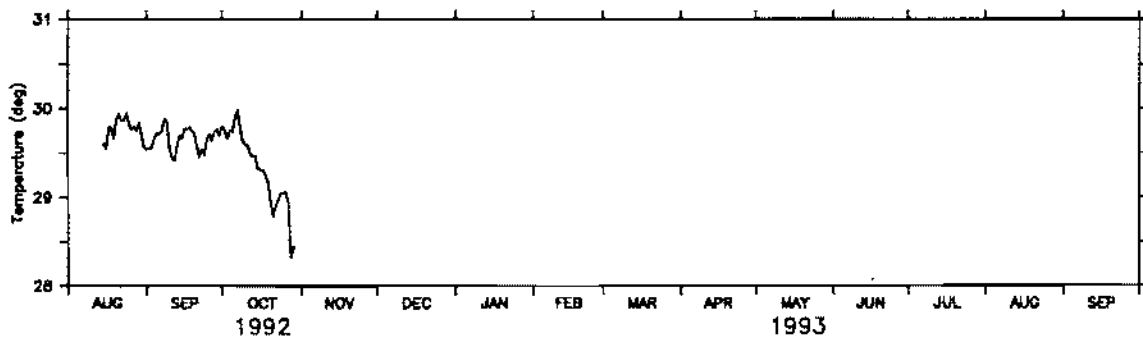
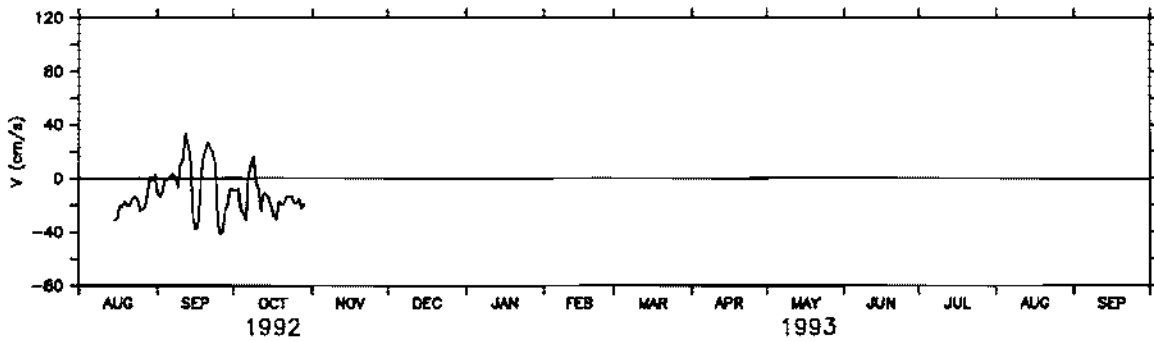
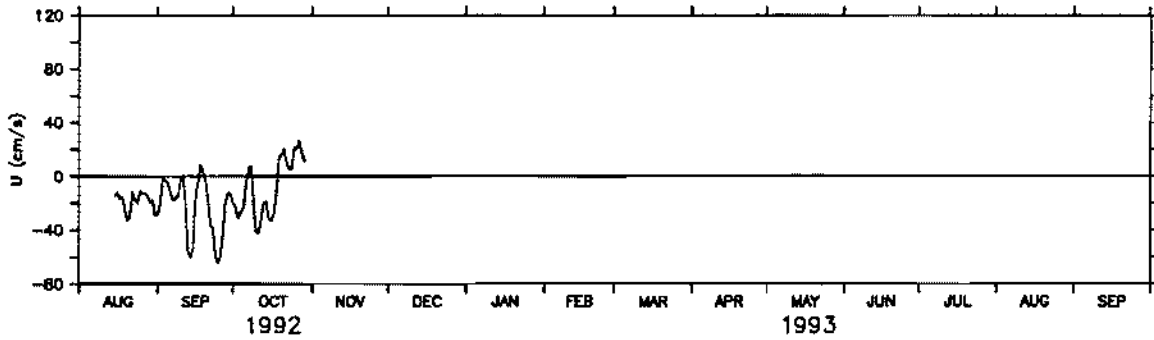
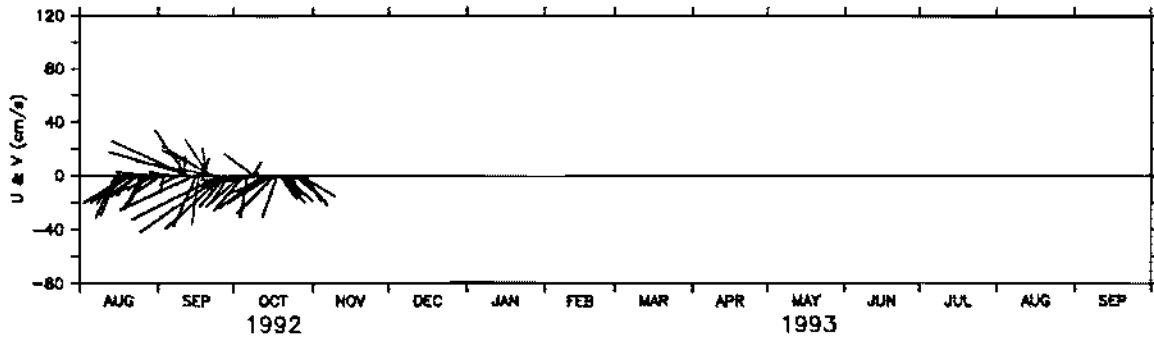
Bouée dérivante BODEGA n°2675

Date début et position : 13/08/92 à 0.0 165.82°E
Launch date and position
Date fin et position : 30/10/92 à 6.63°S, 156.18°E
End date and position:

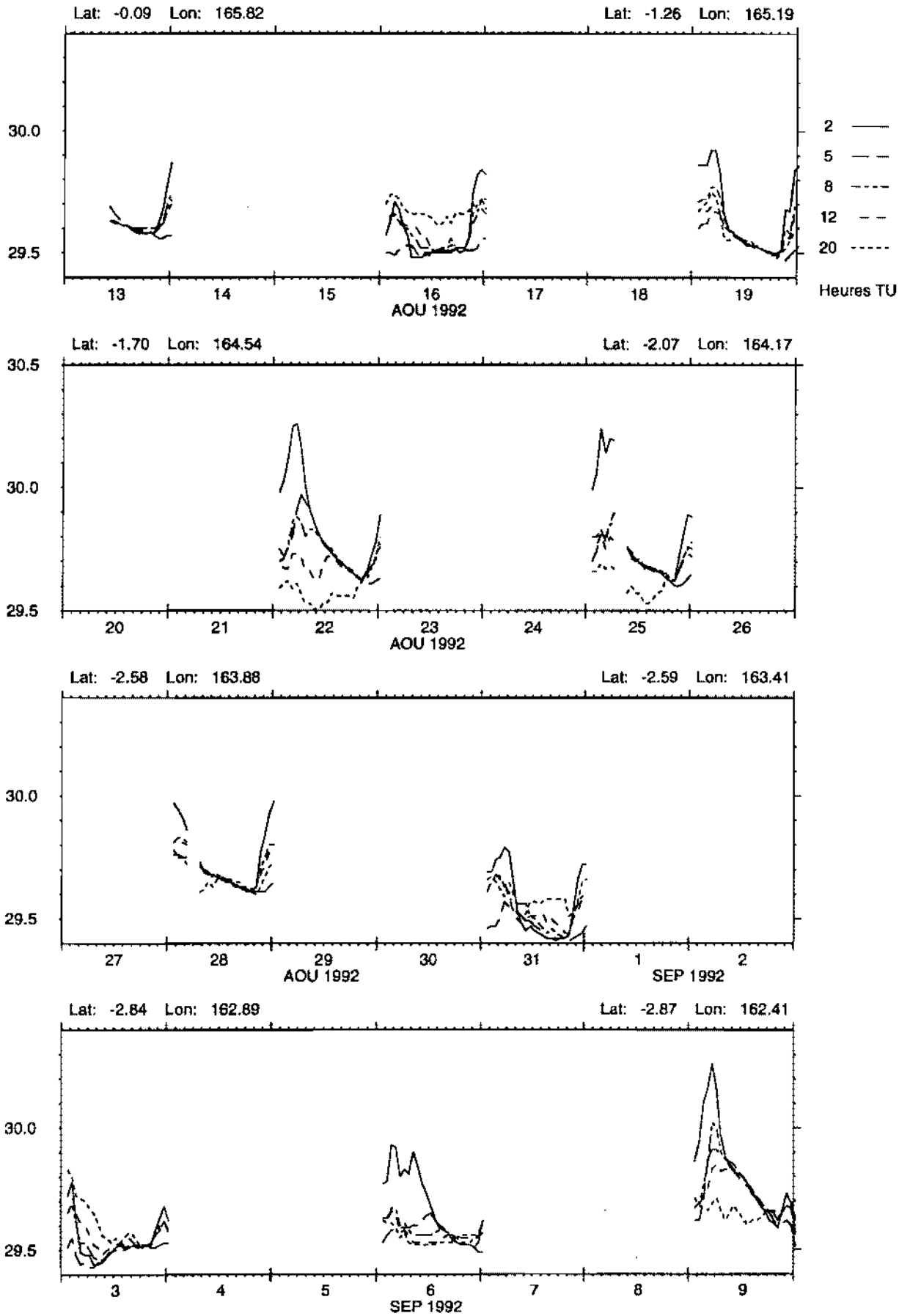
2675



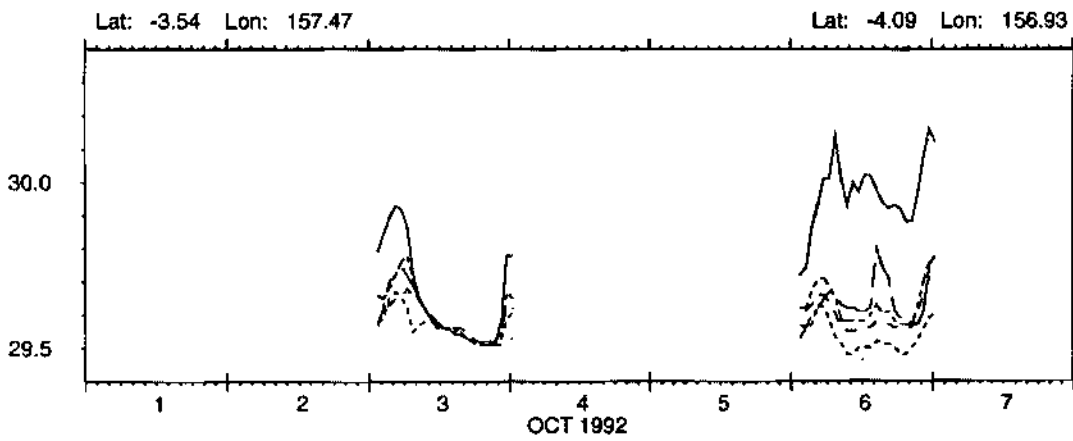
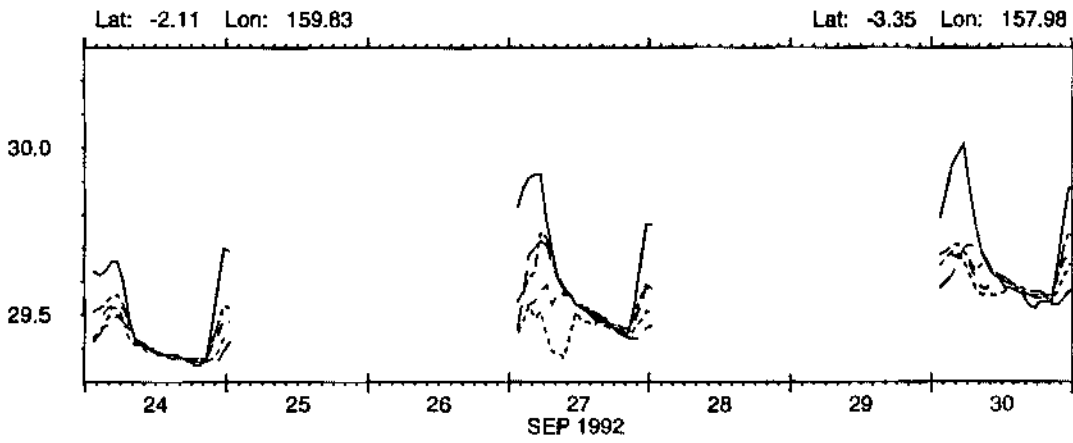
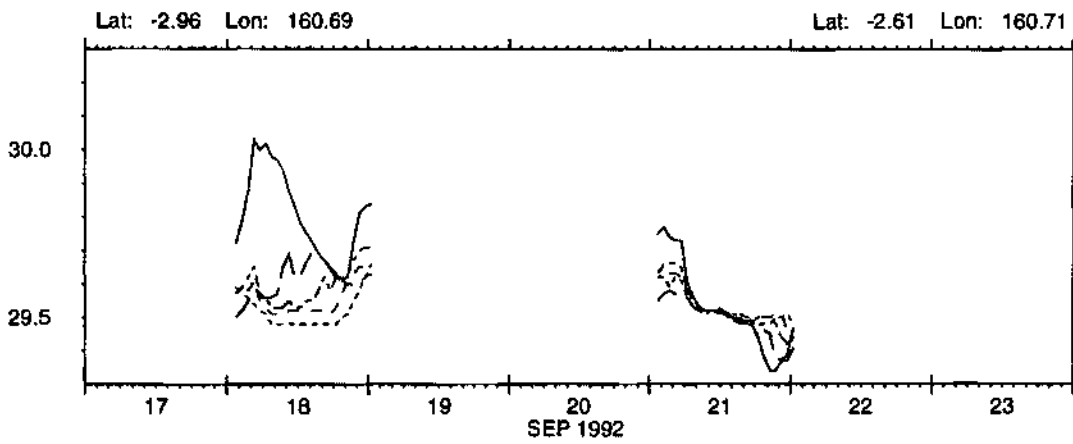
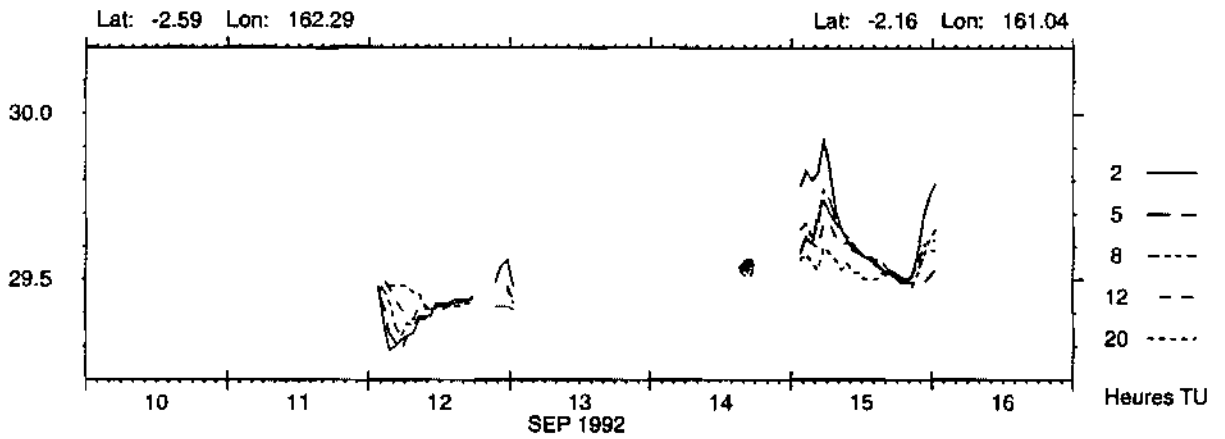
N°2675



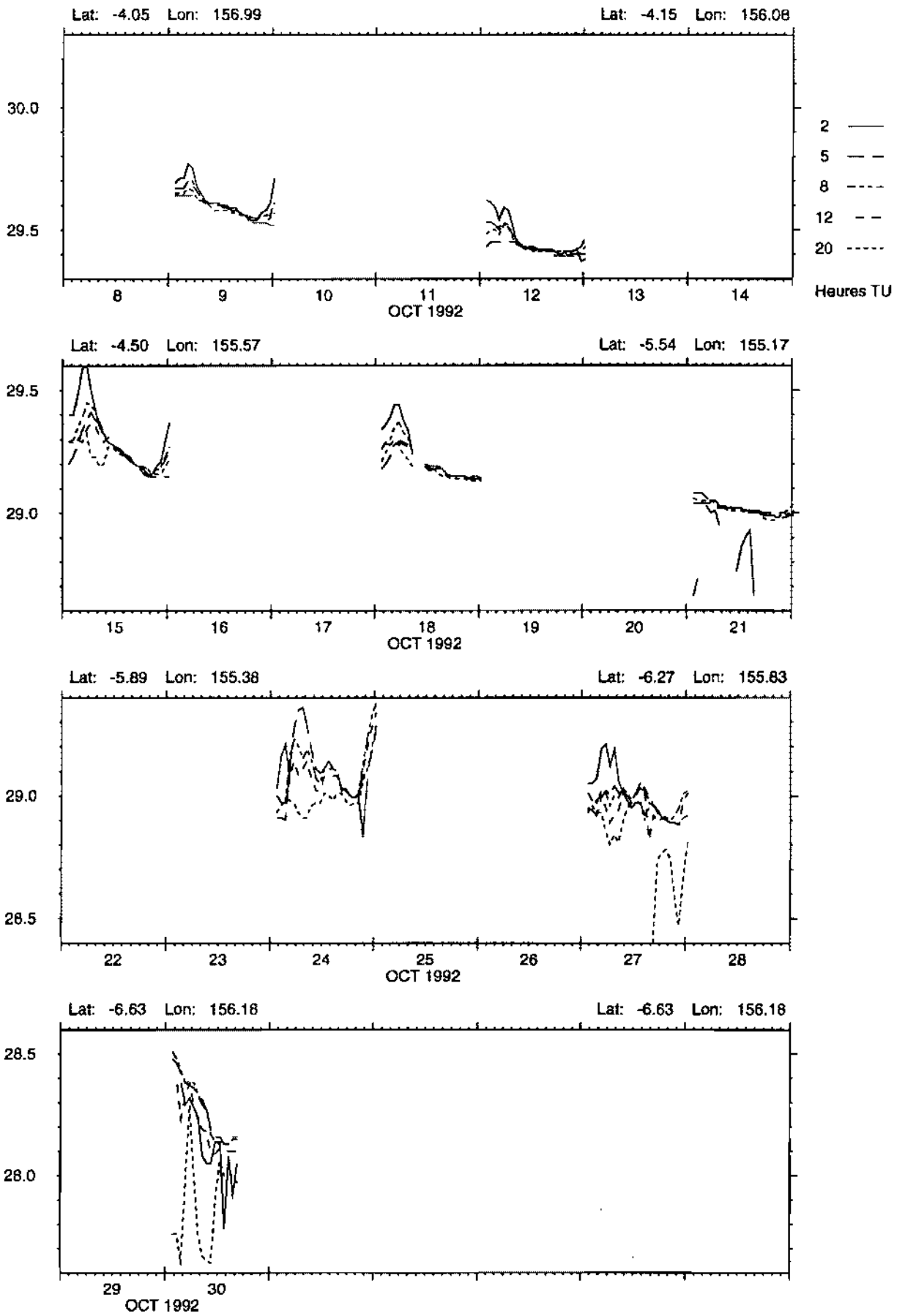
02675

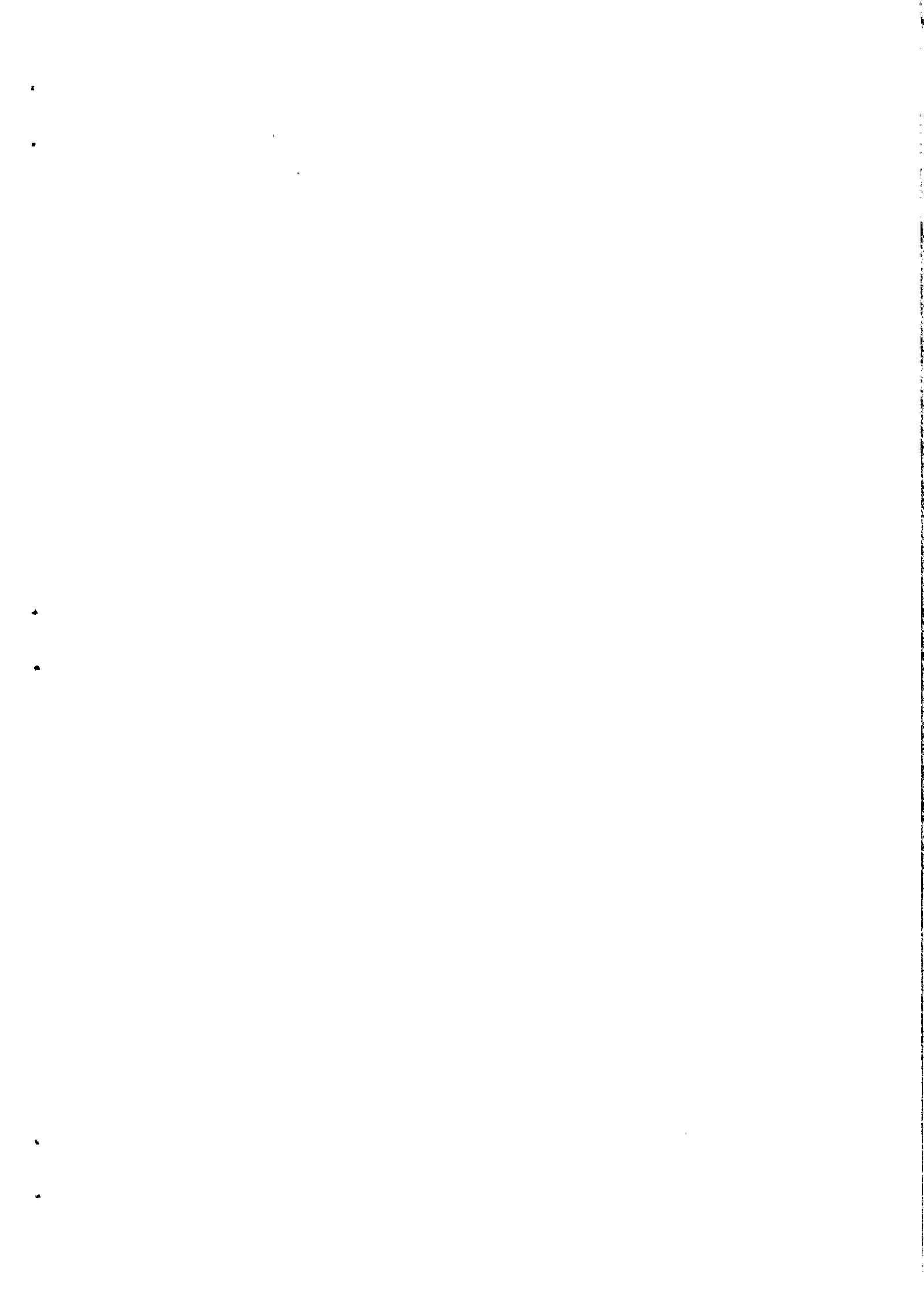


02675



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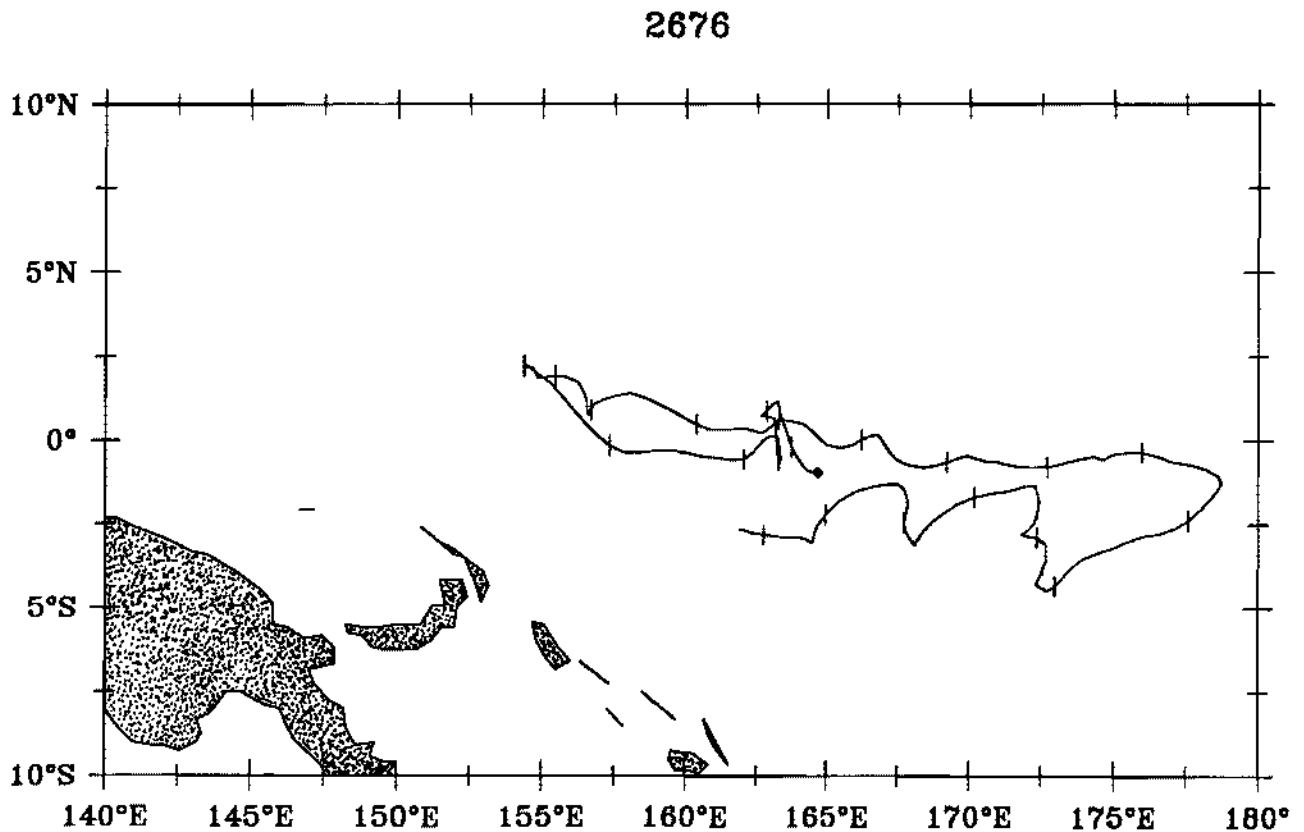
Bouée dérivante BODEGA n° 2676

Date début et position : 24/08/92 à 0.96°S, 164.76°E
Launch date and position
Date fin et position : 27/05/93 à 1.77°S 160.88°E
End date and position
Ancre flottante perdue le 25/12/92
Drogue lost on December 25 1992.

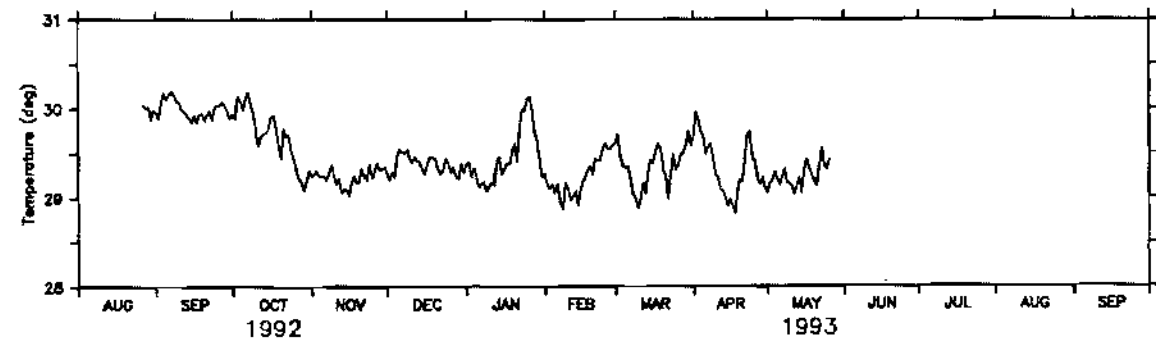
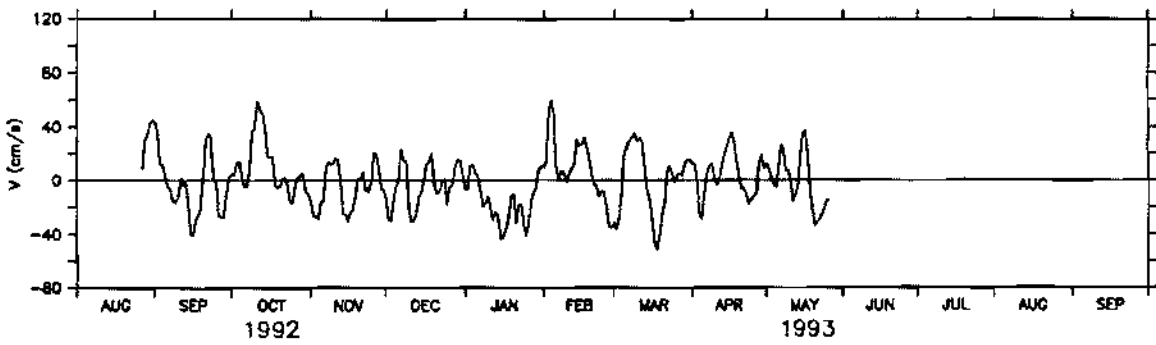
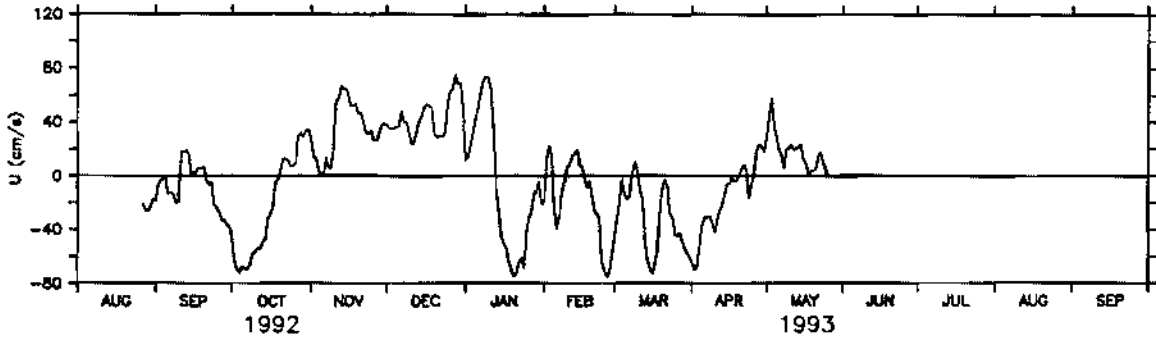
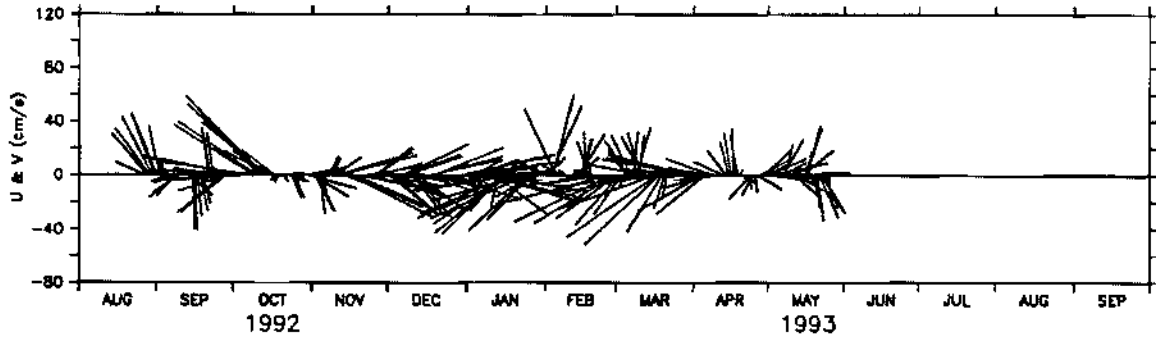
Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

. cycle 24 (01/11/92): +0.02 capteur 2m
-0.03 capteur 8m
-0.02 capteur 20m
. cycle 27 (10/11/92) : -0.04 capteur 8m
-0.03 capteur 20m
. cycle 31 (22/11/92) : +0.03 capteur 2m
. cycle 33 (28/11/92) : +0.05 capteur 2m

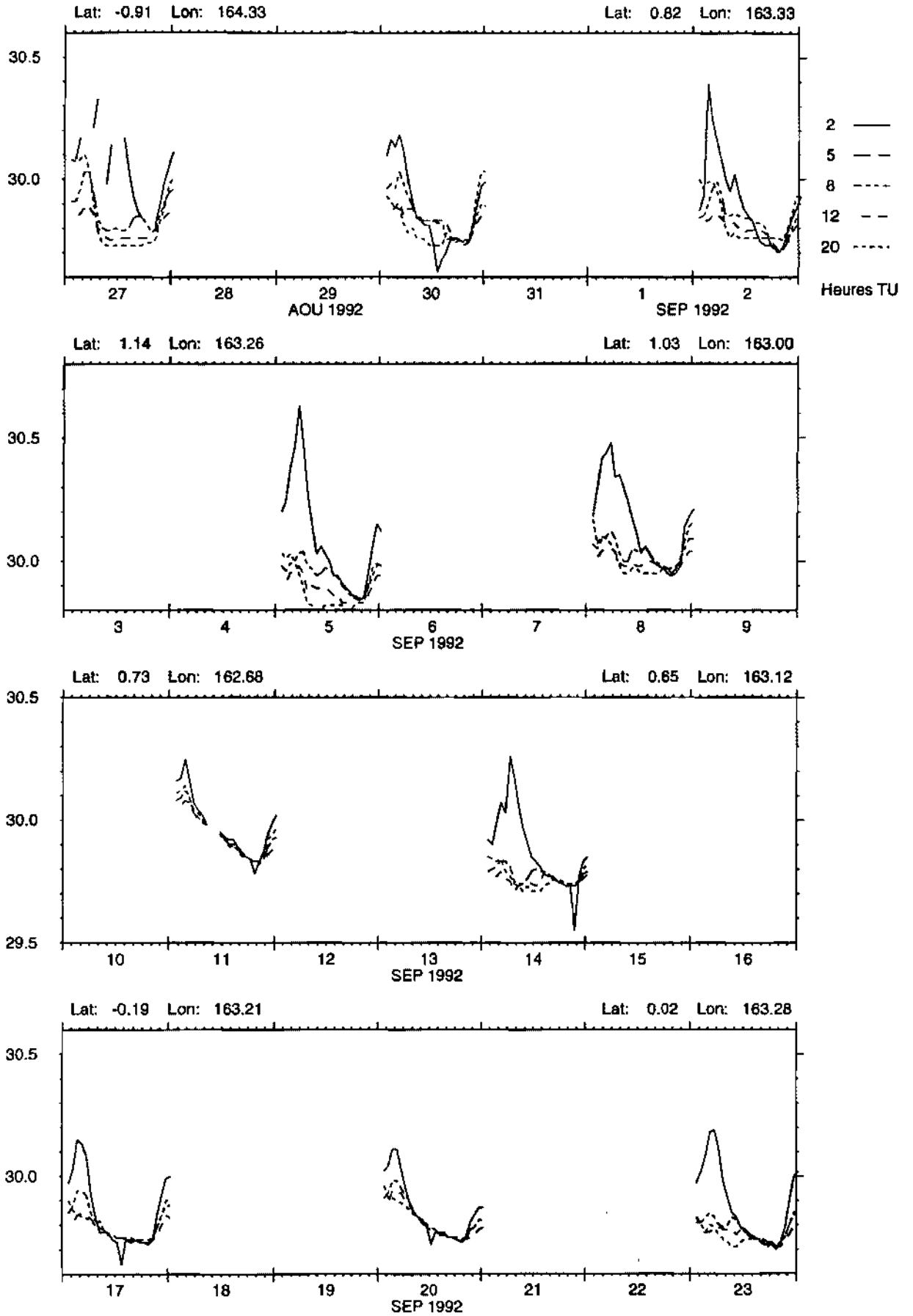
Remarque : Le capteur 5m est défectueux dès le déploiement. Il n'y a donc pas de capteur 5m dans les figures ci-après. *Data from 5m sensor have been removed due to sensor failure.*



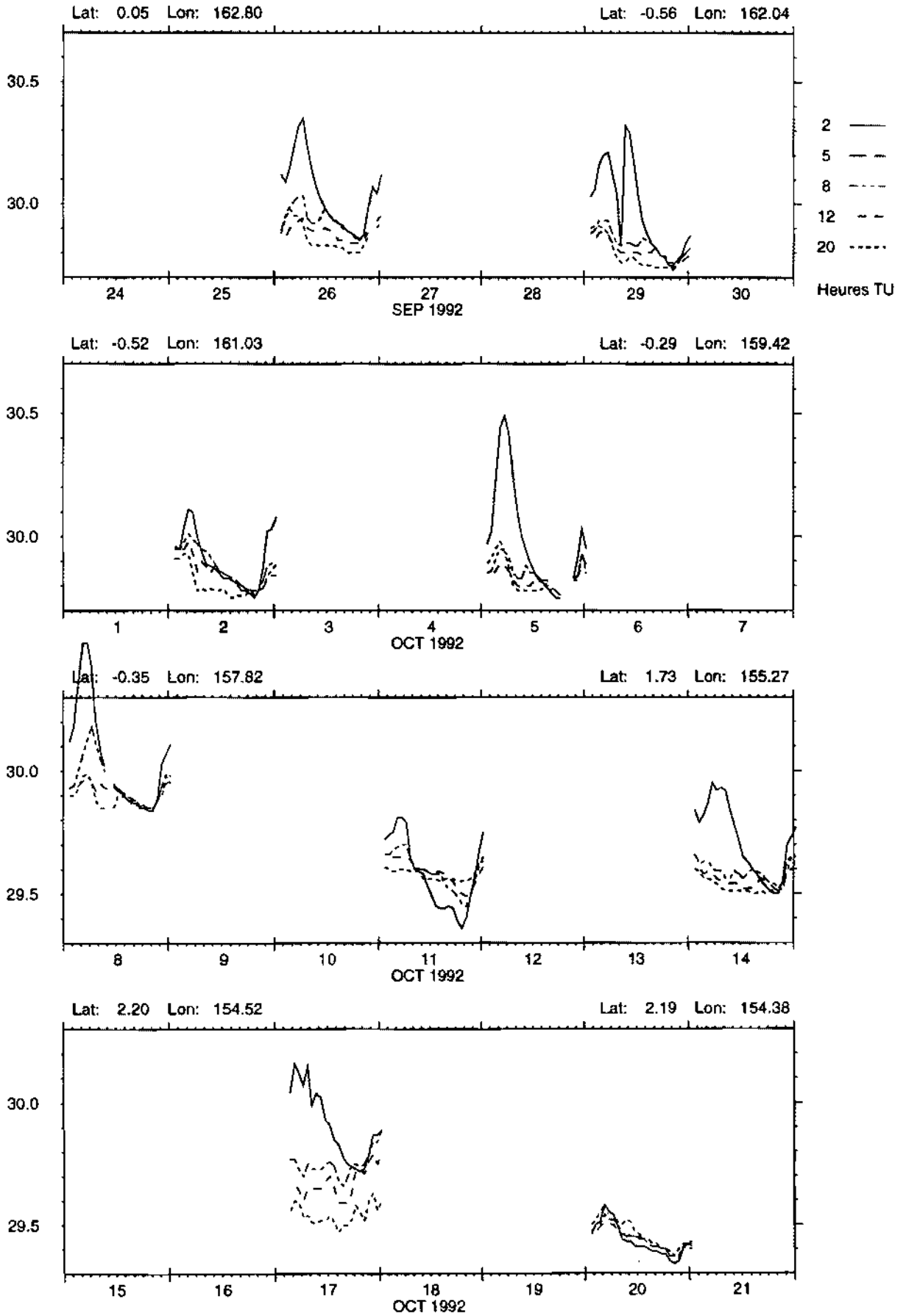
N°2676



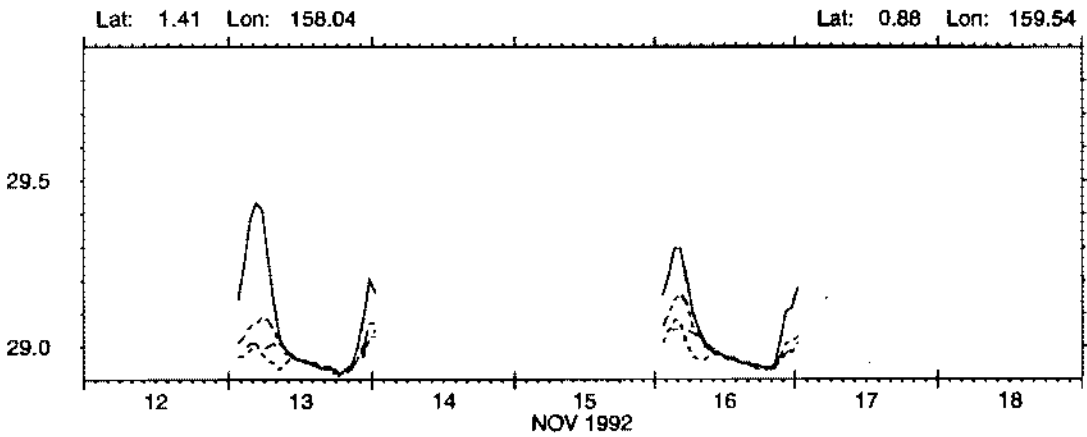
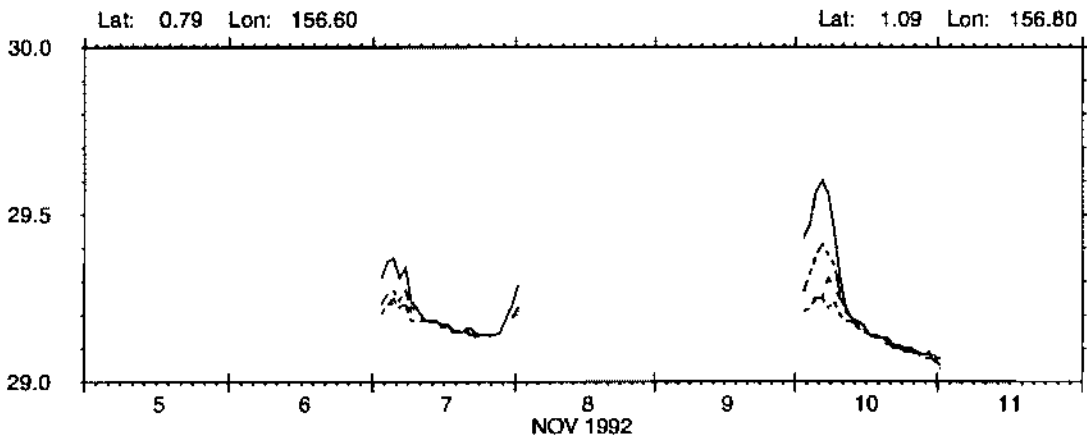
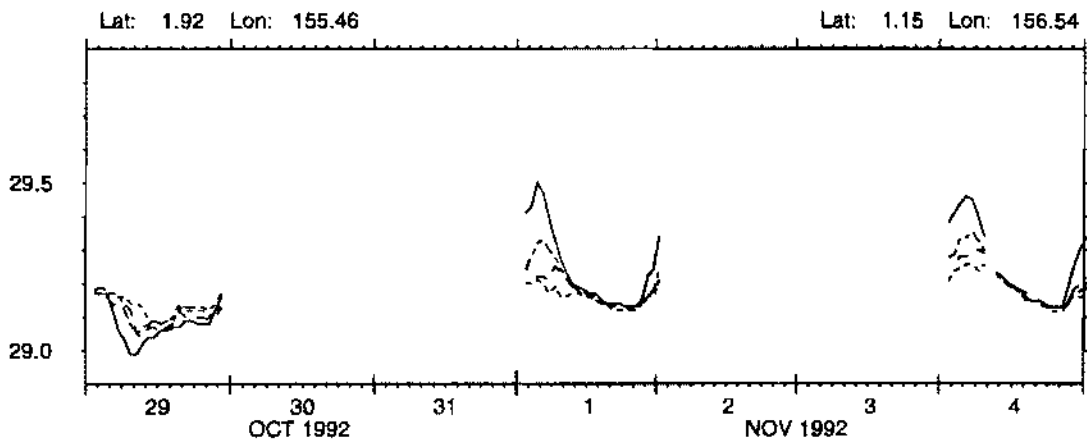
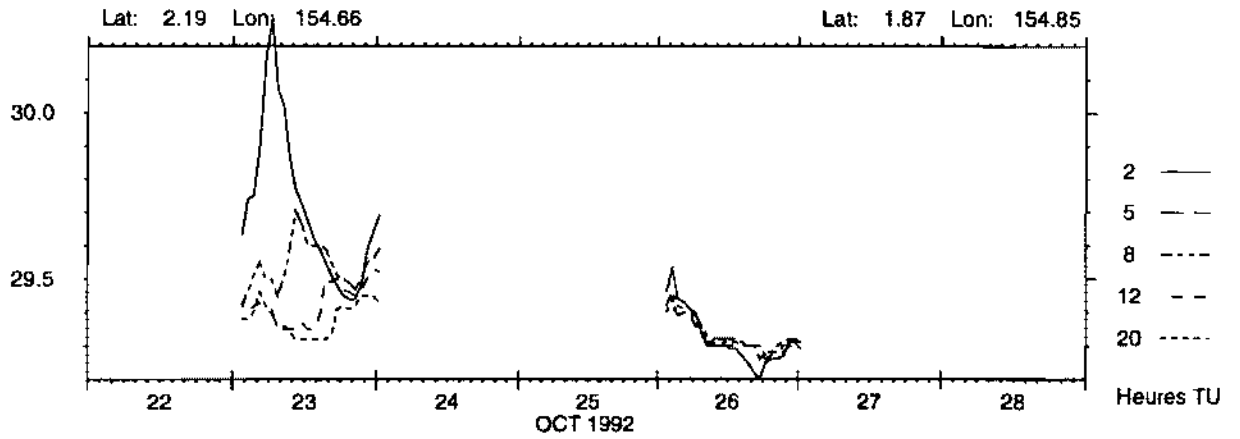
02676



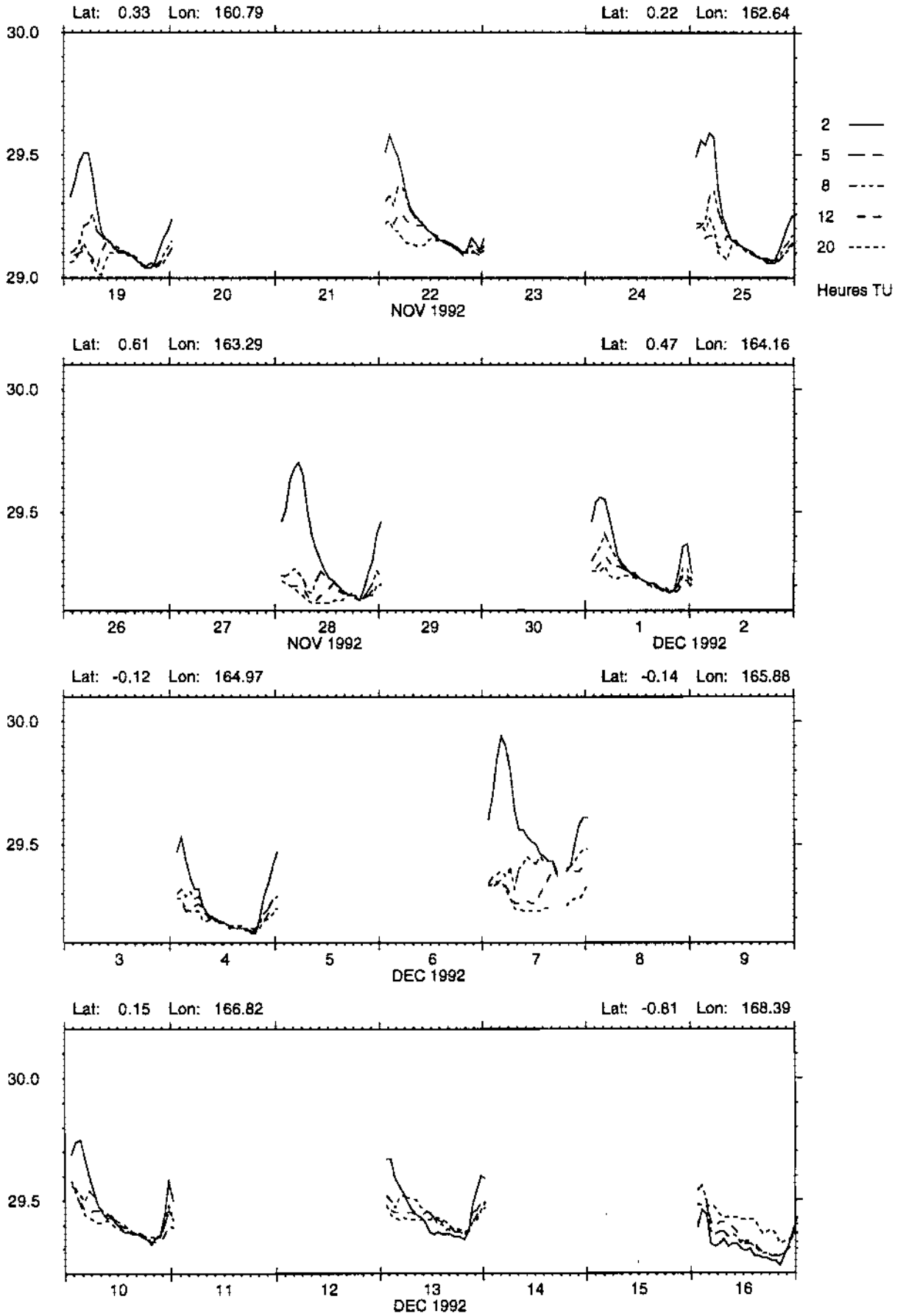
02676



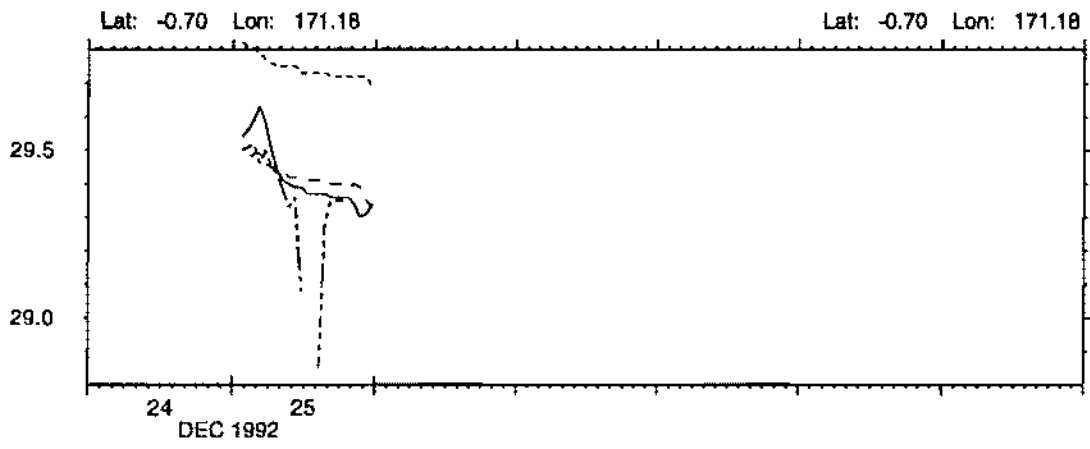
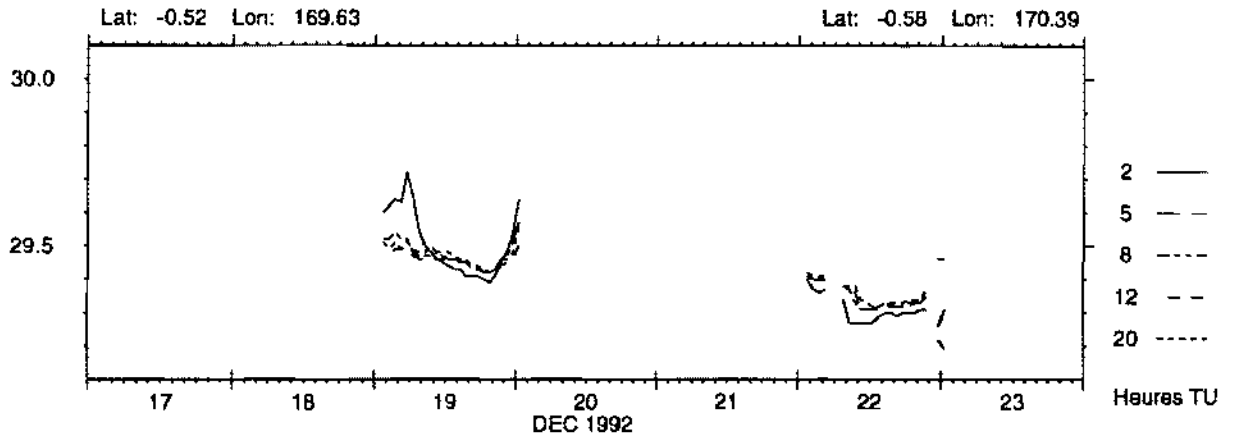
02676

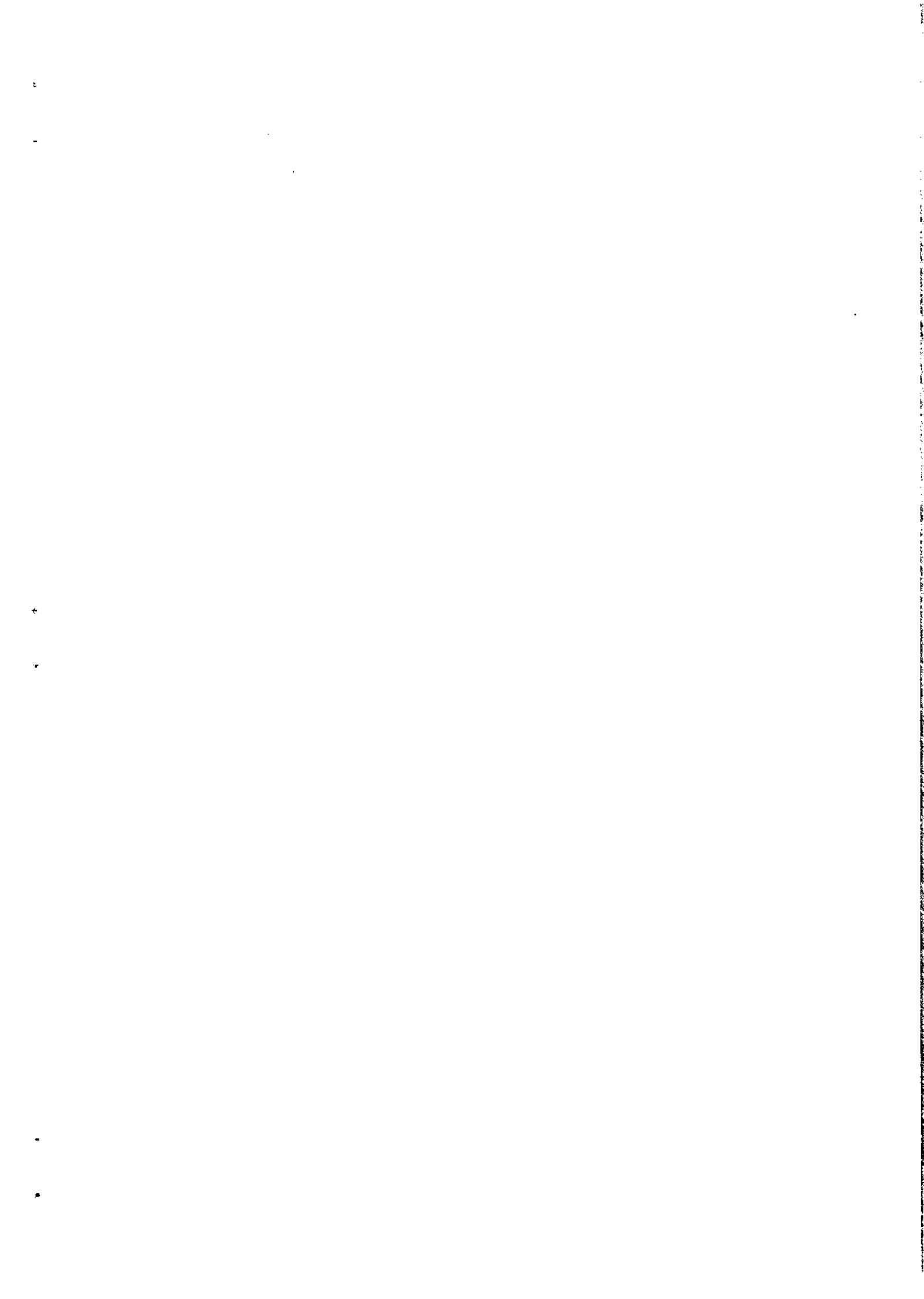


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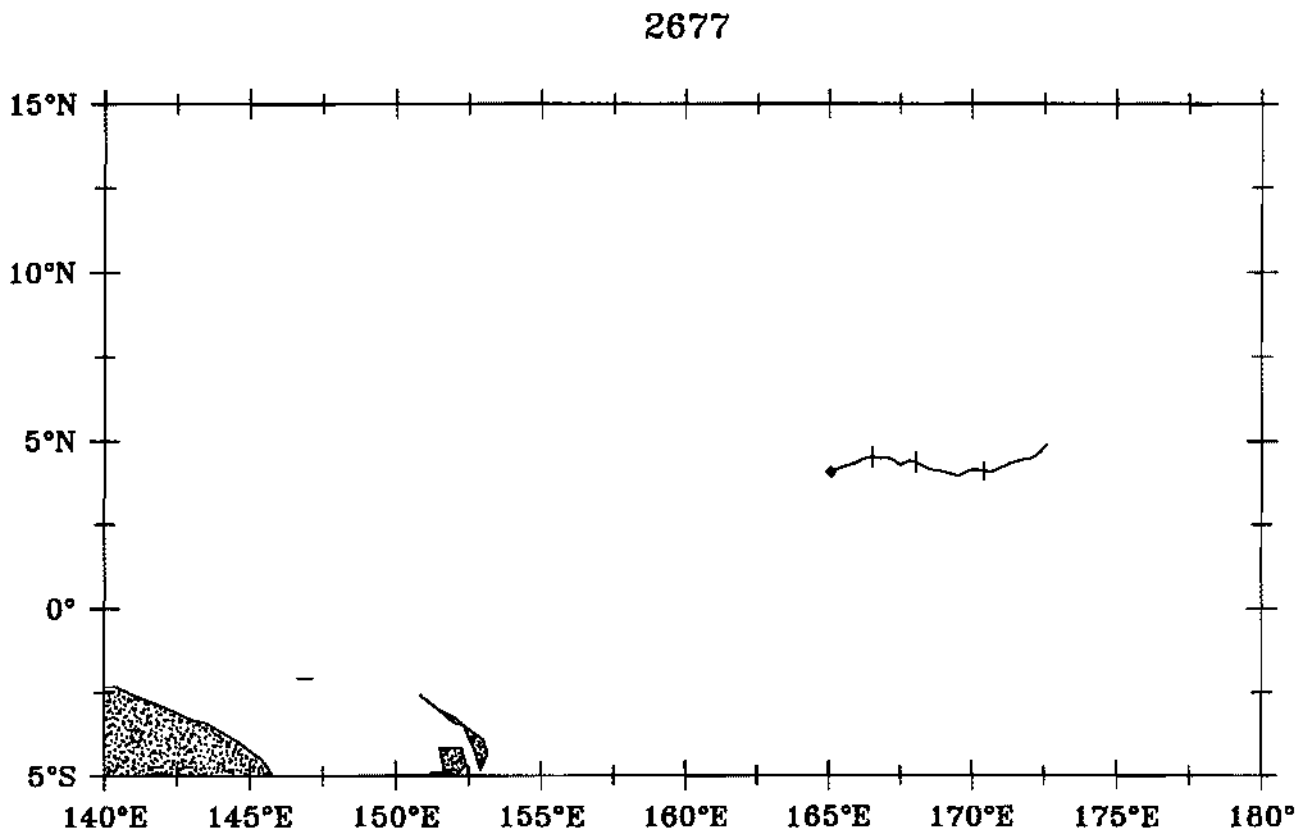
02676



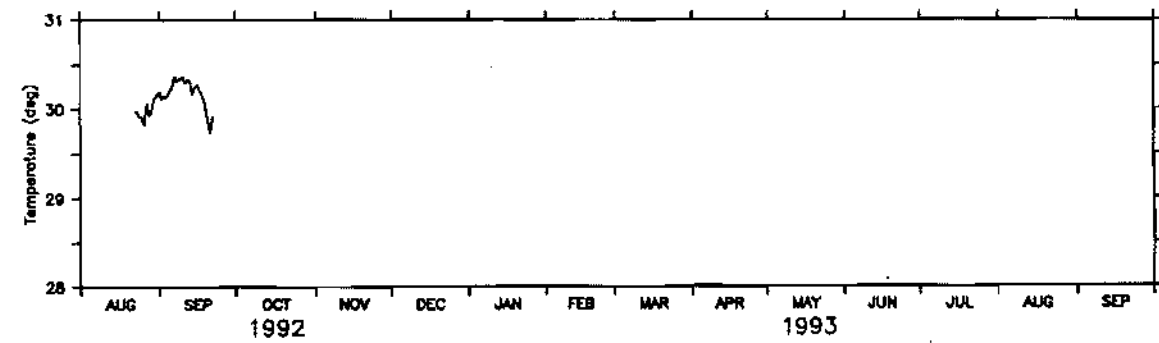
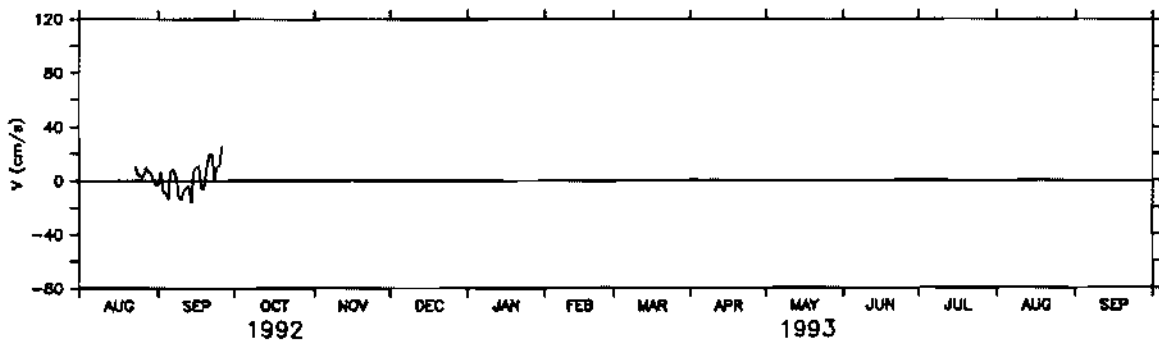
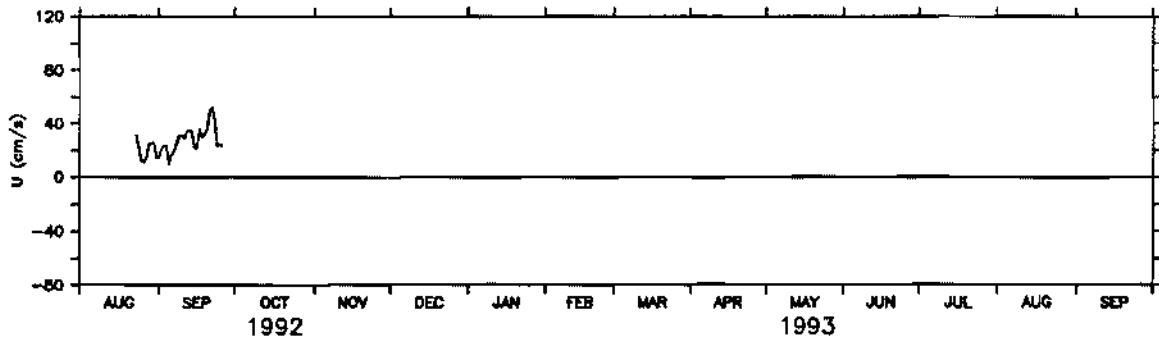
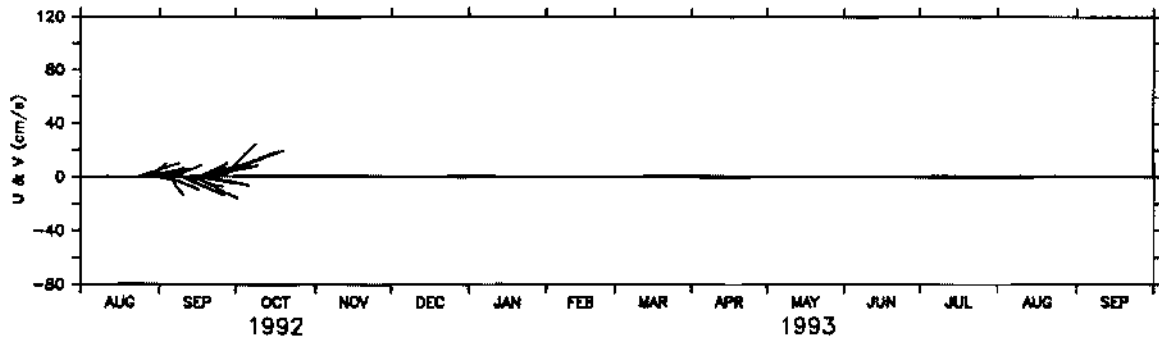


Bouée dérivante BODEGA n° 2677

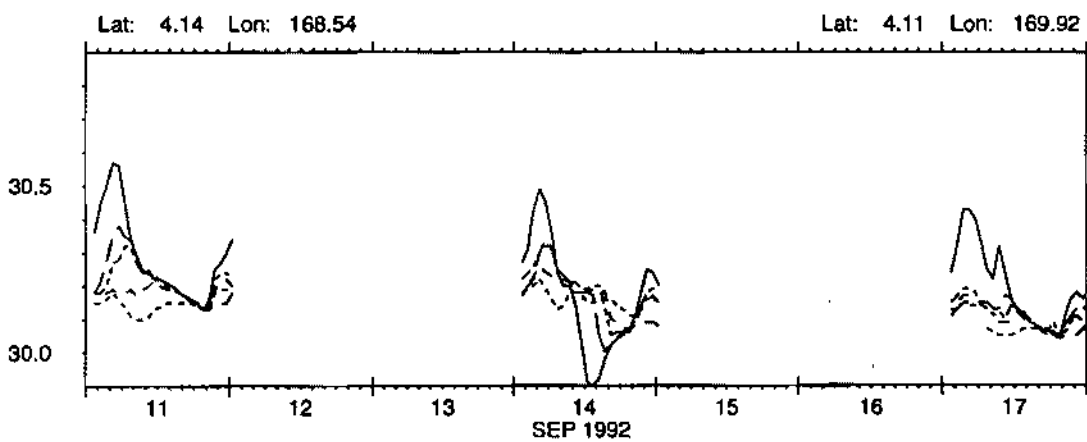
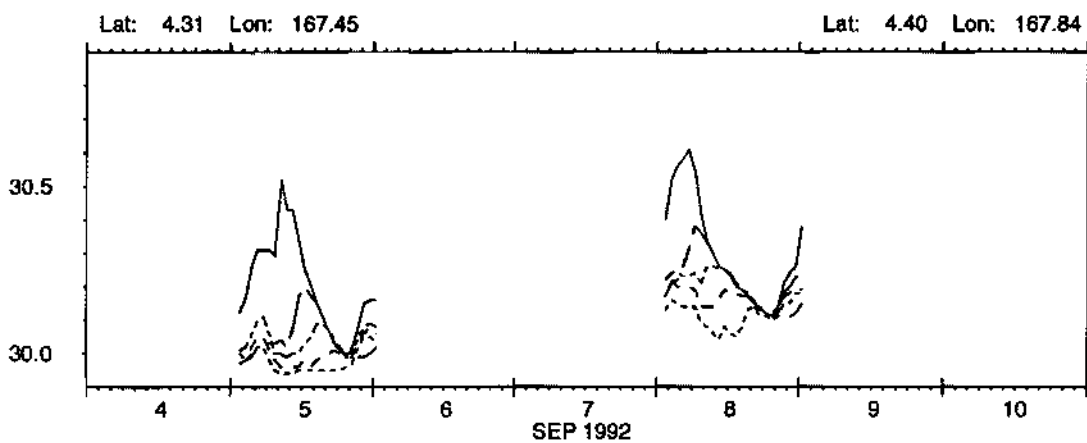
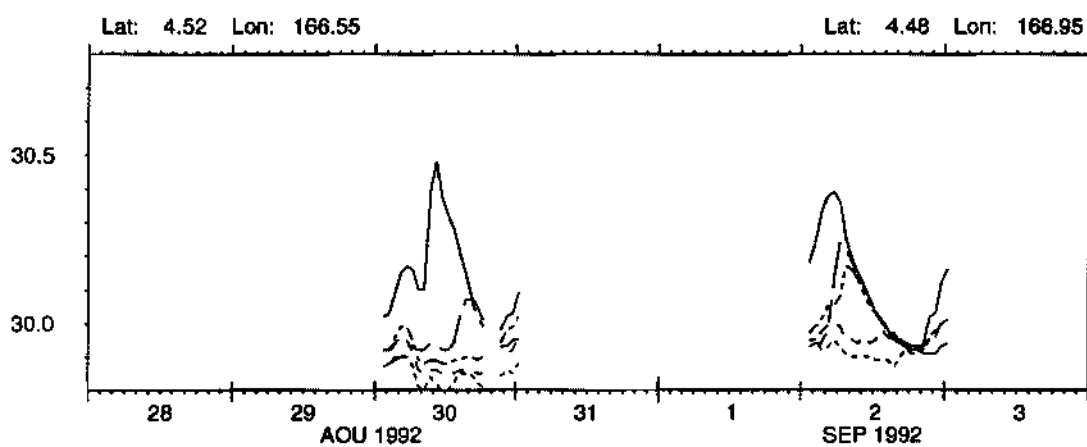
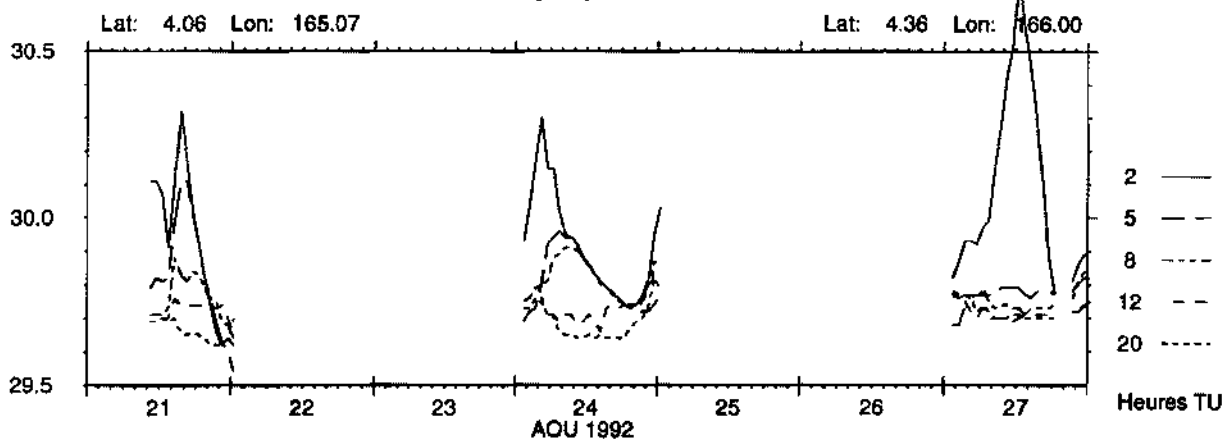
Date début et position : 21/08/92 à 4.06°N, 165.07°E
Launch date and position
Date fin et position : 27/09/92 à 4.89°N, 172.58°E
End date and position



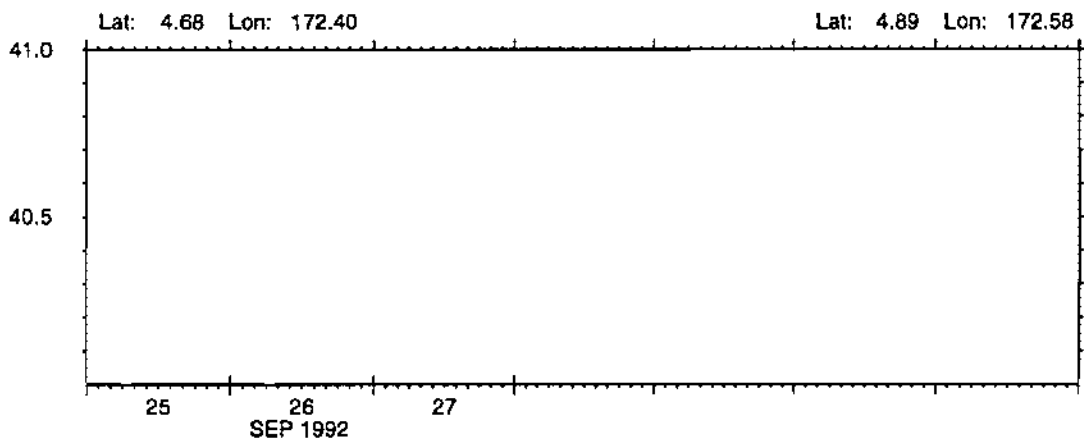
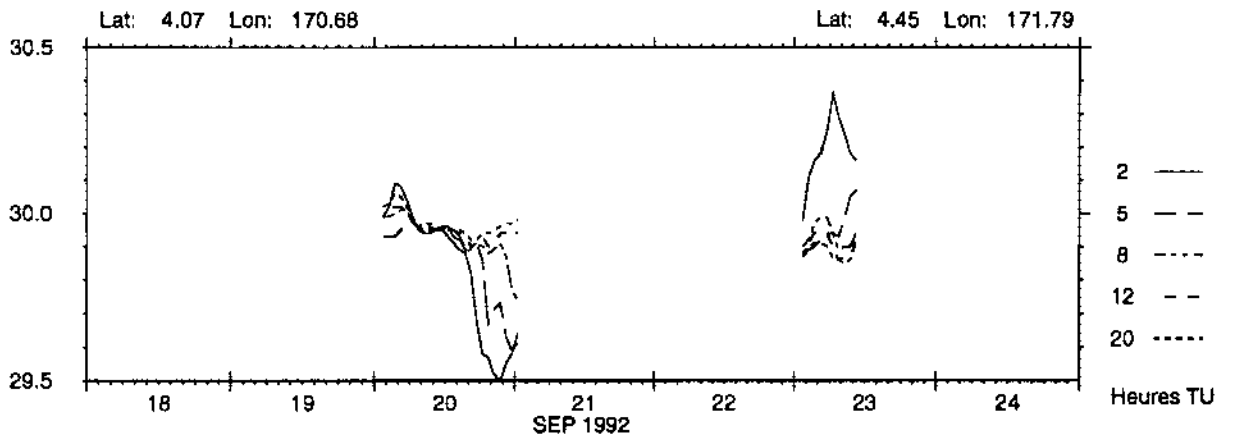
N°2677



02677



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Bouée dérivante BODEGA n° 2678

Date début et position : 15/08/1992 à 4.06°N, 165.16°E

Launch date and position

Date fin et position : 10/12/1993 à 14.75°S, 140°E

End date and position

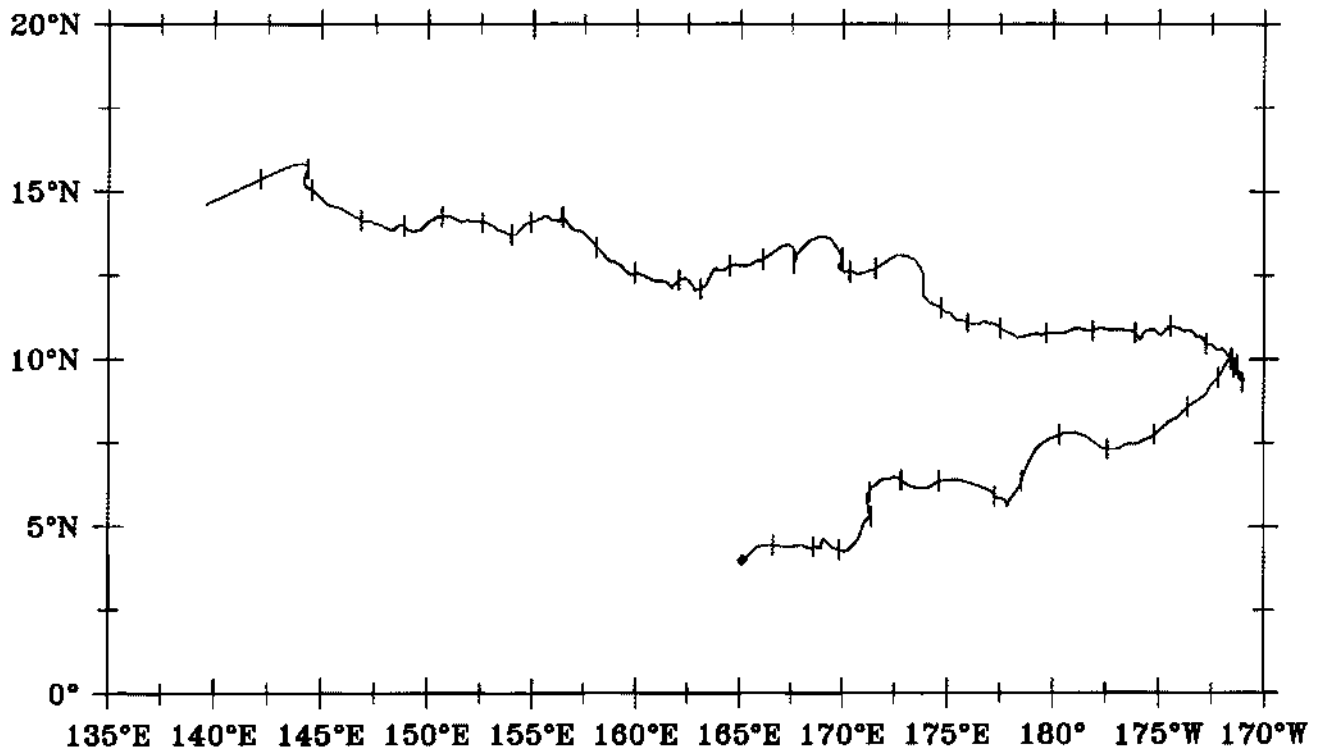
Corrections effectuées pour compenser les dérives de capteurs:

Proposed corrections to compensate sensor drifts

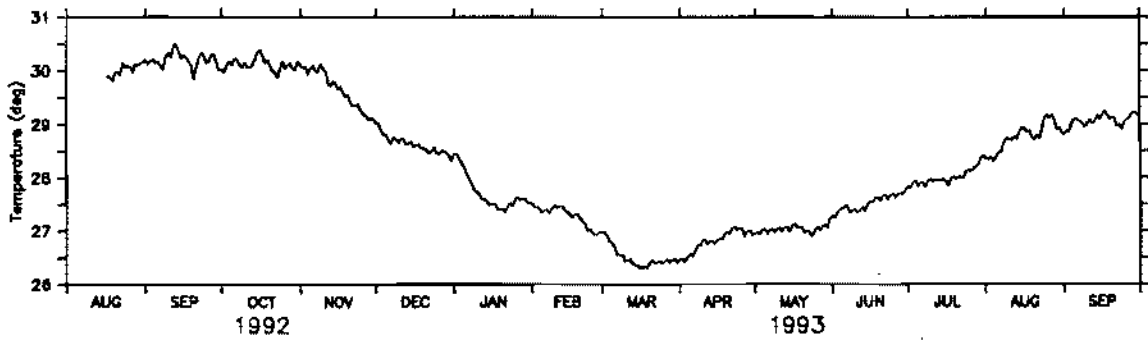
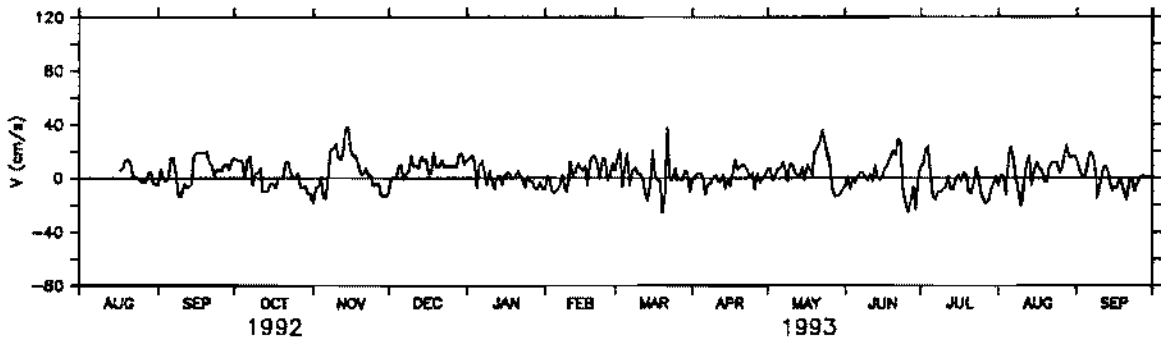
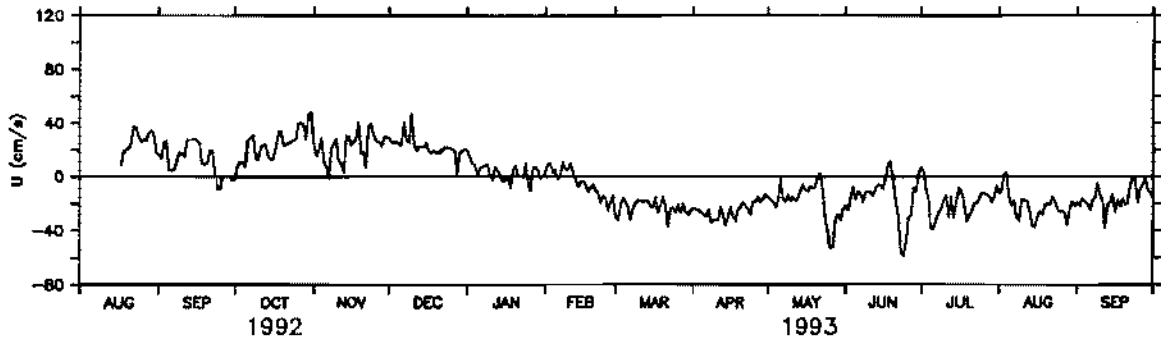
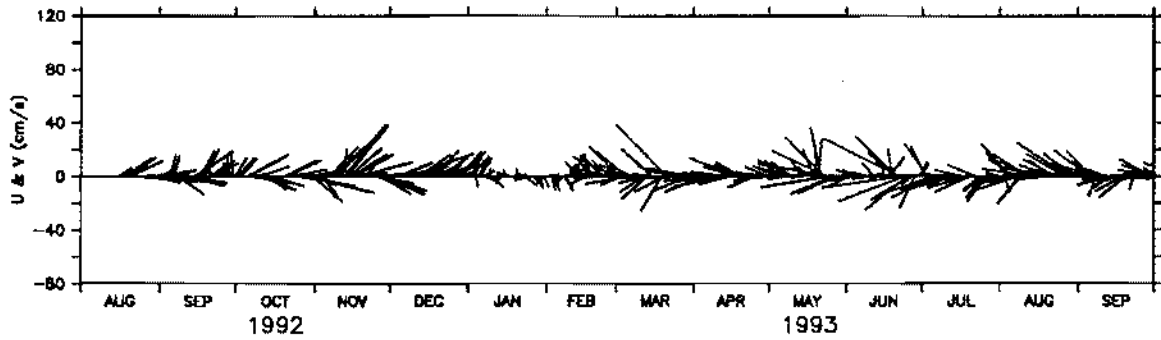
<p>. cycle 30 (10/11/92) : -0.02 capteur 5m -0.02 capteur 8m -0.02 capteur 12m</p> <p>. cycle 39 (07/12/92) : -0.03 capteur 5m -0.03 capteur 8m -0.03 capteur 12m</p> <p>. cycle 40 (10/12/92) : -0.04 capteur 5m</p> <p>. cycle 42 (16/12/92) : -0.05 capteur 5m -0.04 capteur 8m -0.04 capteur 12m</p> <p>. cycle 53 (15/01/93) : 0.08 capteur 5m</p> <p>. cycle 65 (23/02/93) : -0.09 capteur 5m -0.07 capteur 8m -0.06 capteur 12m</p>	<p>. cycle 73 (20/03/93) : -0.09 capteur 5m -0.08 capteur 8m -0.03 capteur 12m</p> <p>. cycle 76 (28/03/93) : -0.11 capteur 8m</p> <p>. cycle 80 (09/04/93) : -0.14 capteur 8m</p> <p>. cycle 84 (21/04/93) : -0.21 capteur 8m</p> <p>. cycle 86 (27/04/93) : +0.04 capteur 2m</p> <p>. cycle 99 (05/06/93) : -0.29 capteur 8m</p> <p>. cycle 117 (29/07/93) : -0.27 capteur 8m</p> <p>. cycle 119 (4/07/93) : 0.15 capteur 2m -0.21 capteur 8m</p> <p>. cycle 120 (07/08/93) : 0.16 capteur 2m -0.16 capteur 8m</p> <p>. cycle 127 (28/08/93) : -0.08 capteur 8m</p>
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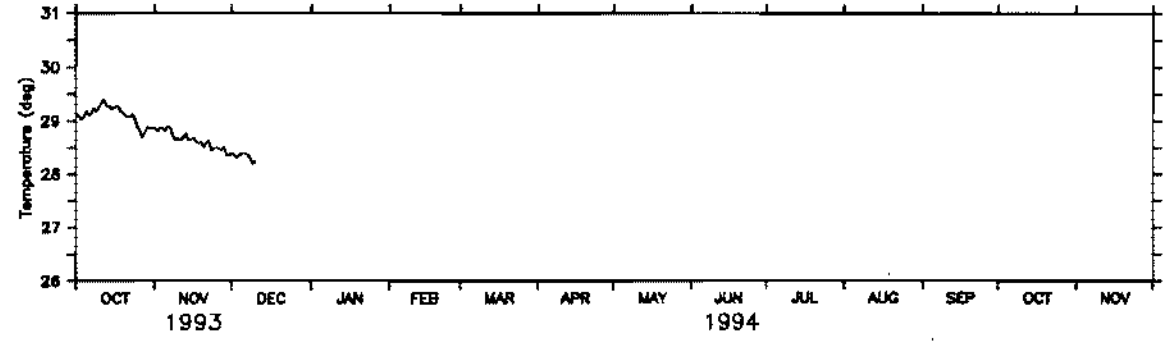
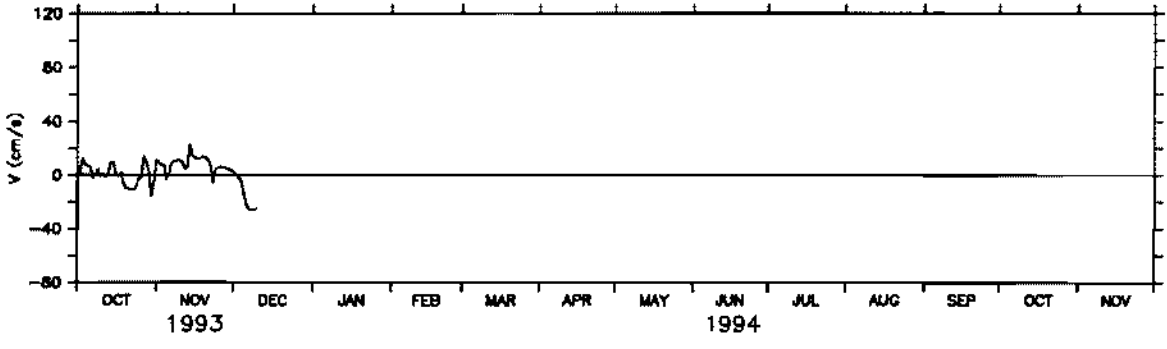
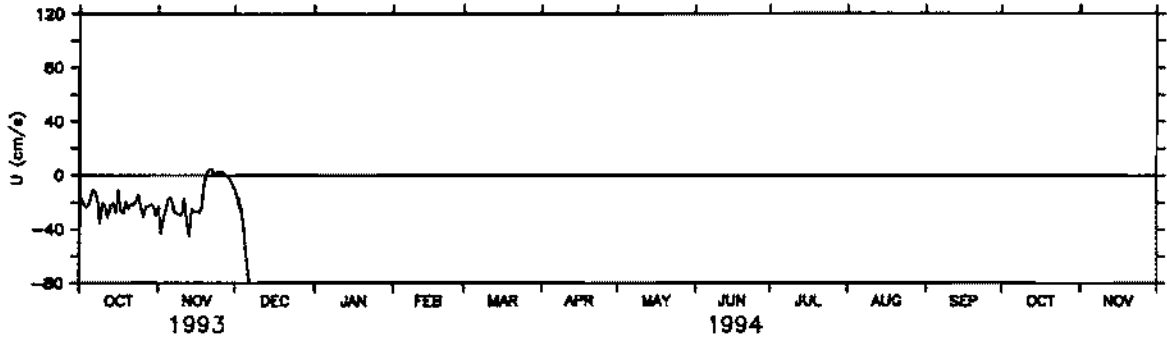
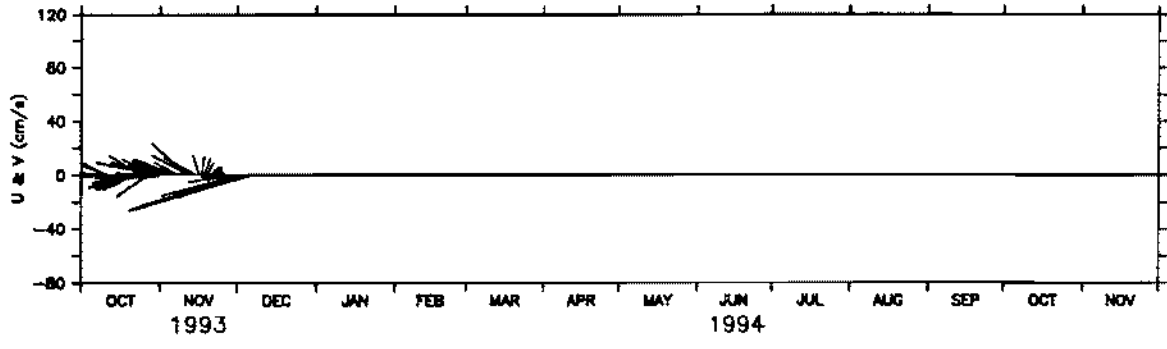
Au-delà du 9 septembre 1993, arrêt des corrections (dérives trop importantes). *Data temperature are not presented after September 9, 1993 as sensor drifts are too important*

2678

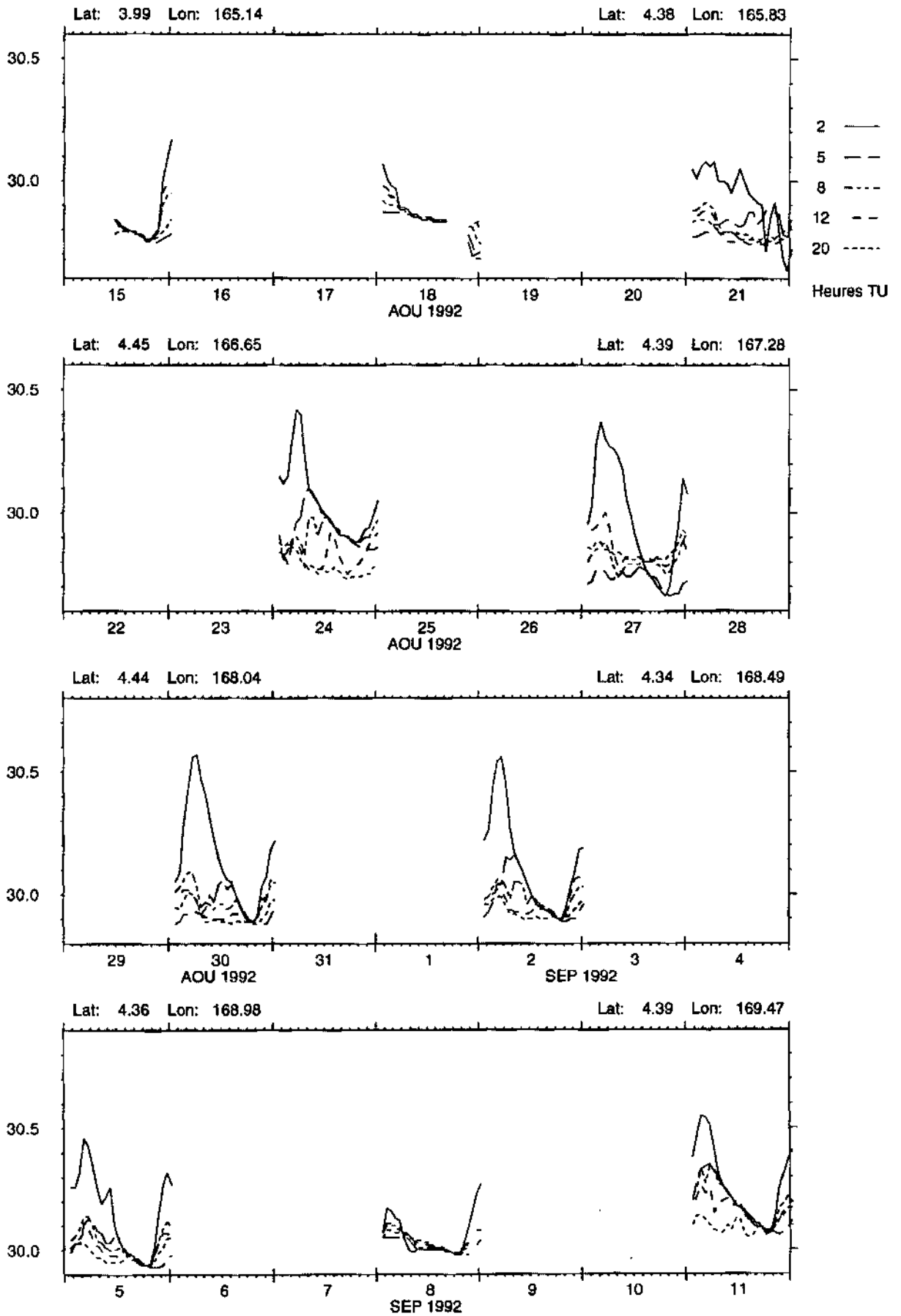


N°2678

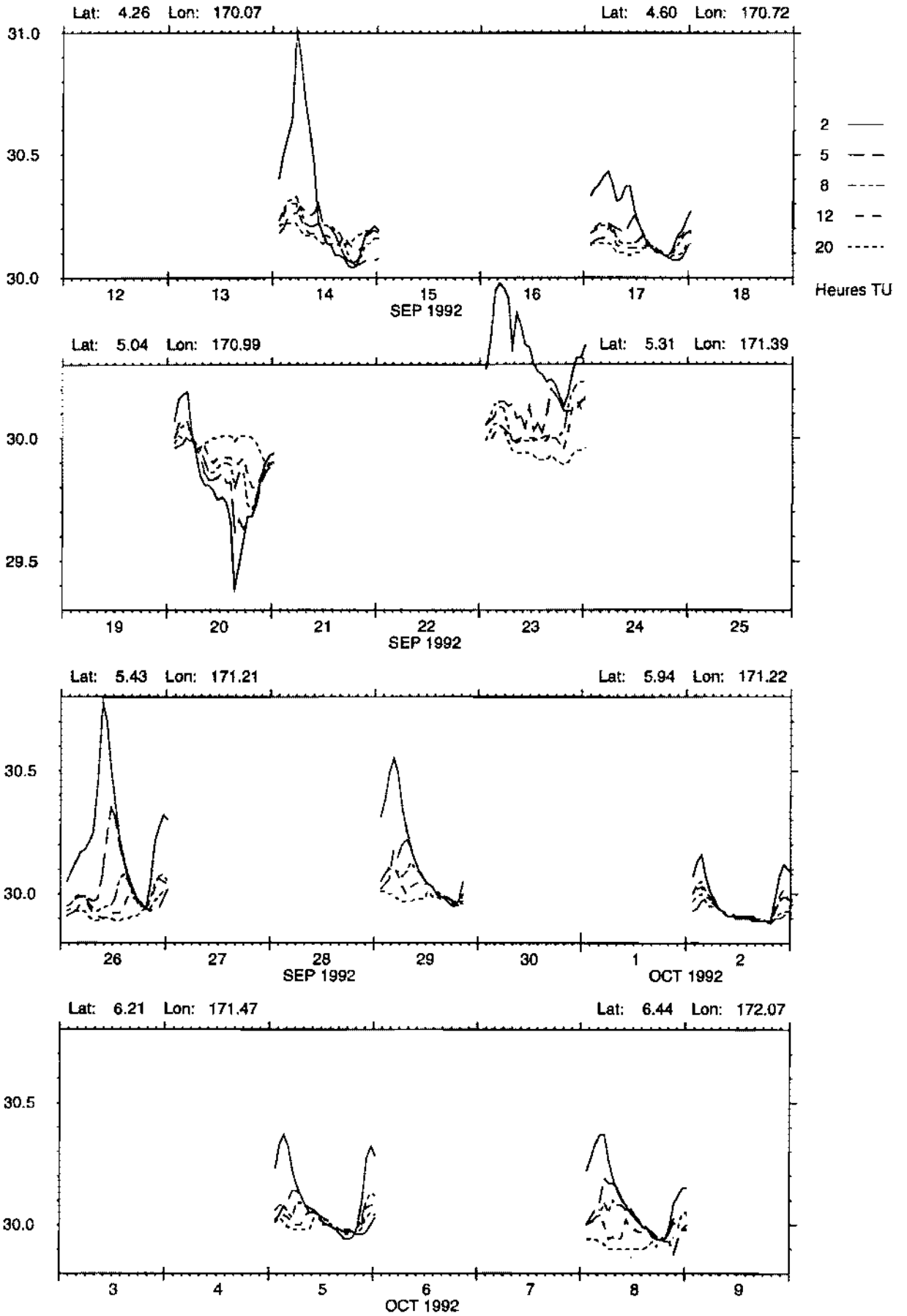




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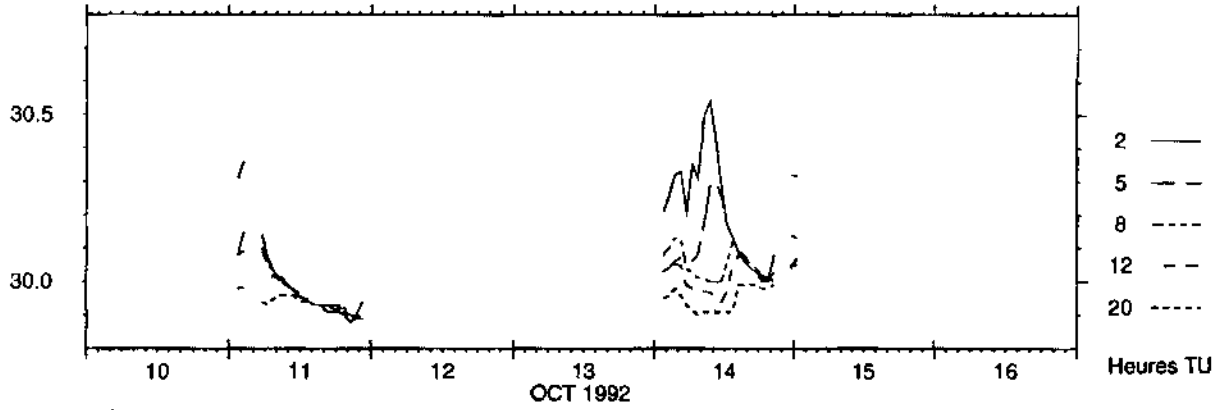
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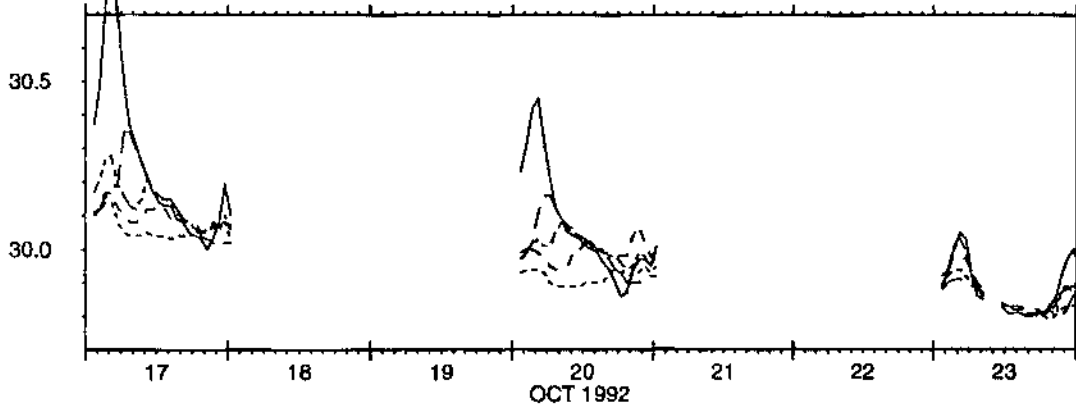
Lat: 6.49 Lon: 172.46

Lat: 6.31 Lon: 173.00



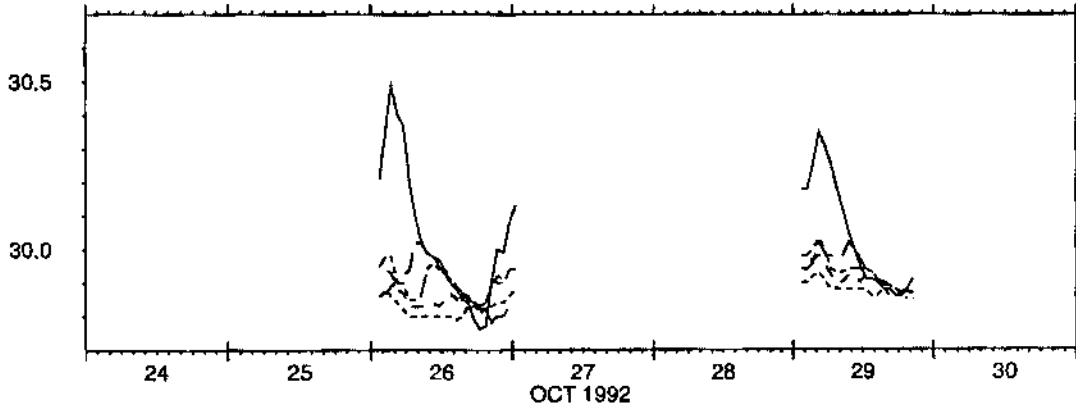
Lat: 6.19 Lon: 173.32

Lat: 6.37 Lon: 174.61



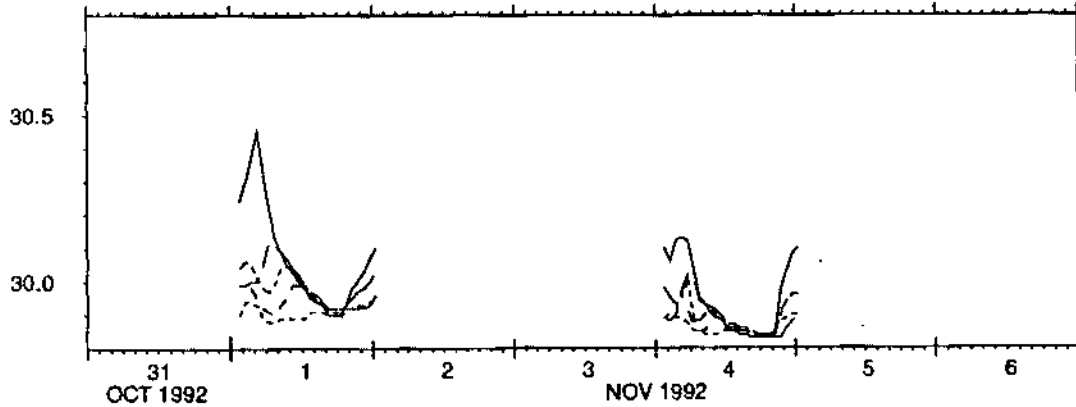
Lat: 6.40 Lon: 175.28

Lat: 6.30 Lon: 176.18

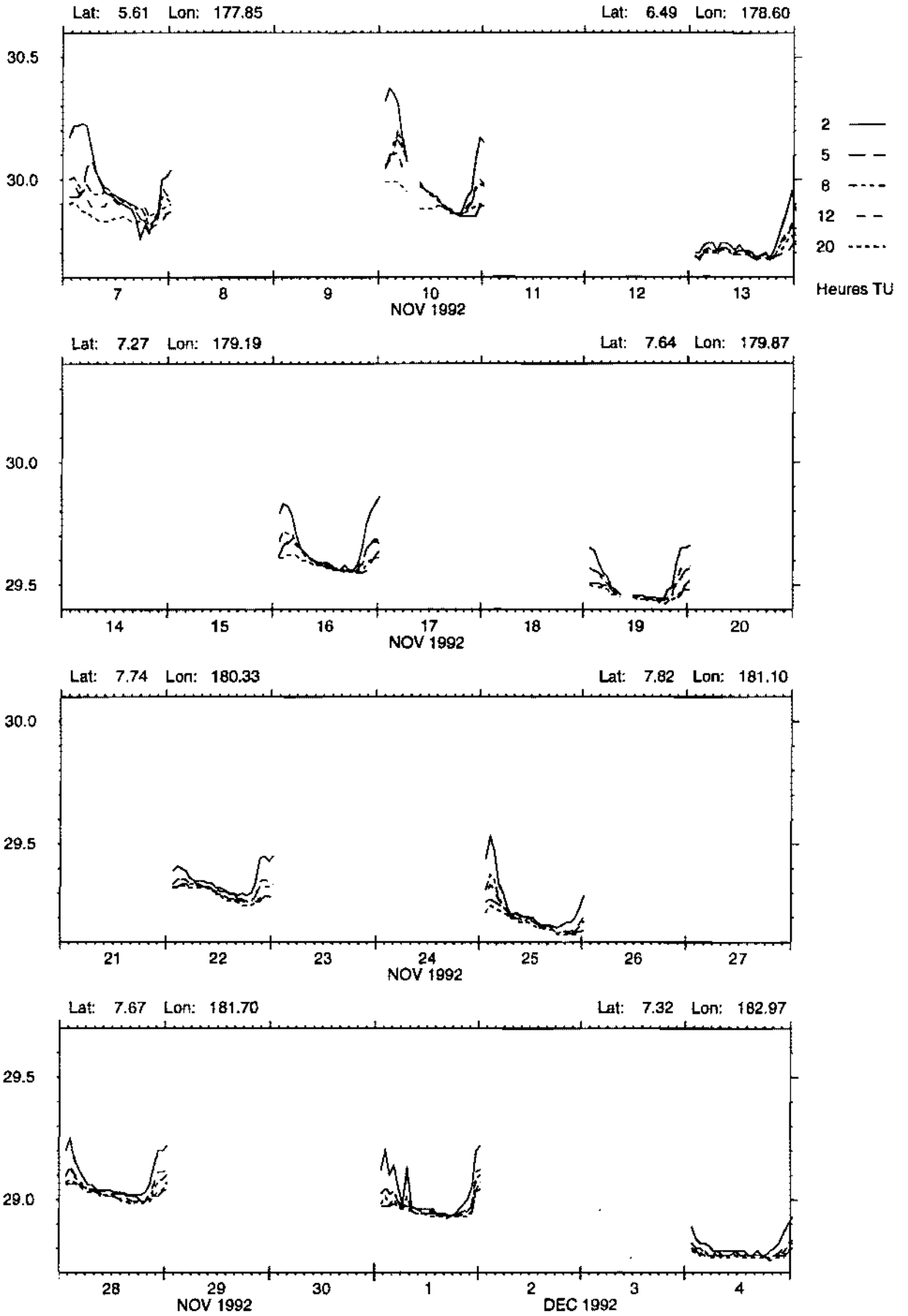


Lat: 6.02 Lon: 177.17

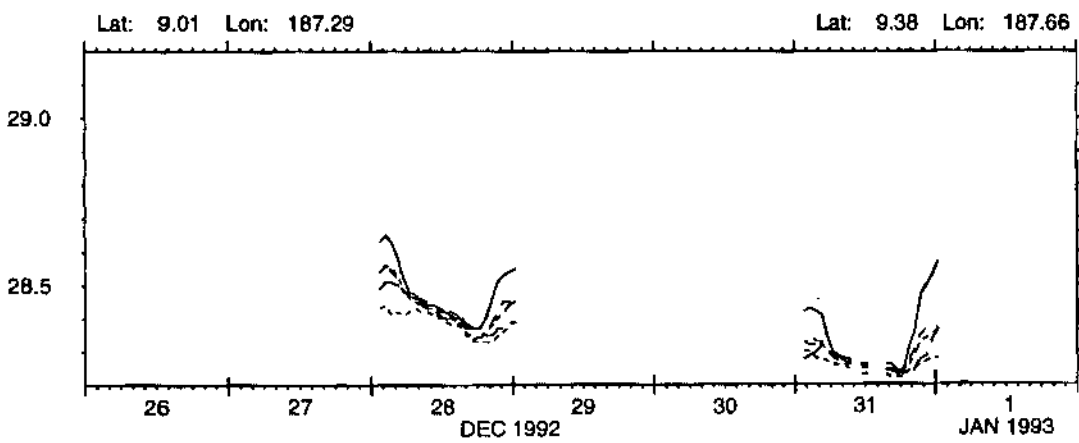
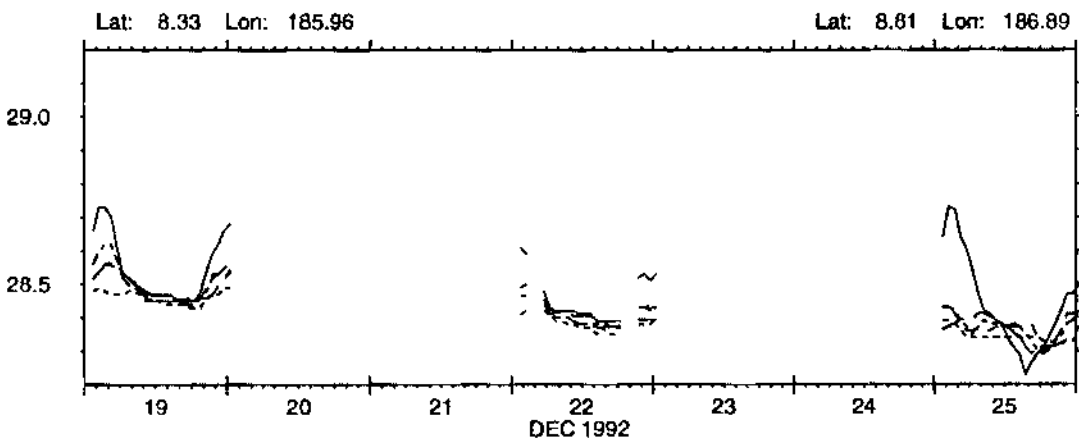
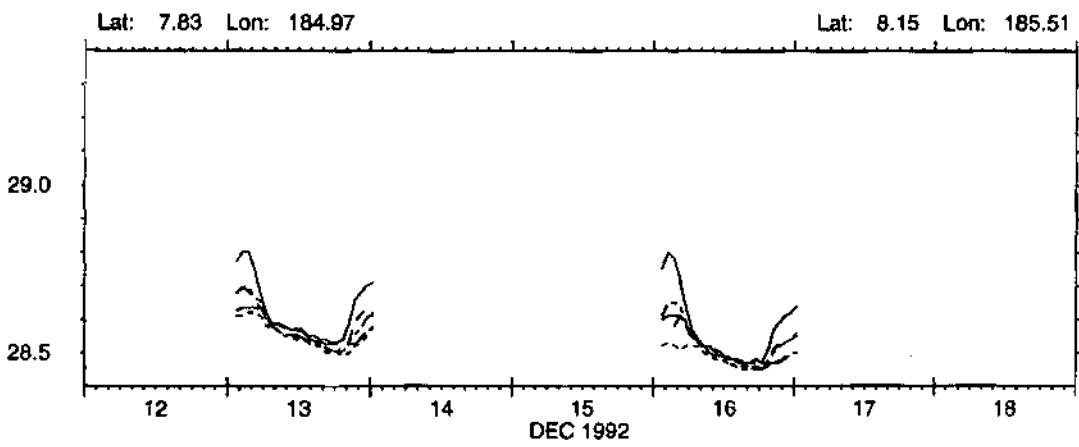
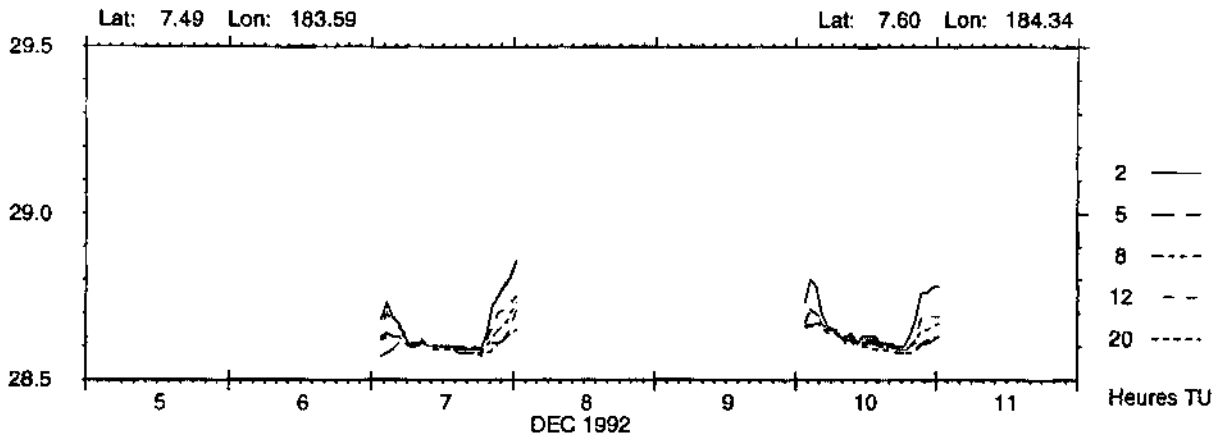
Lat: 5.83 Lon: 177.60



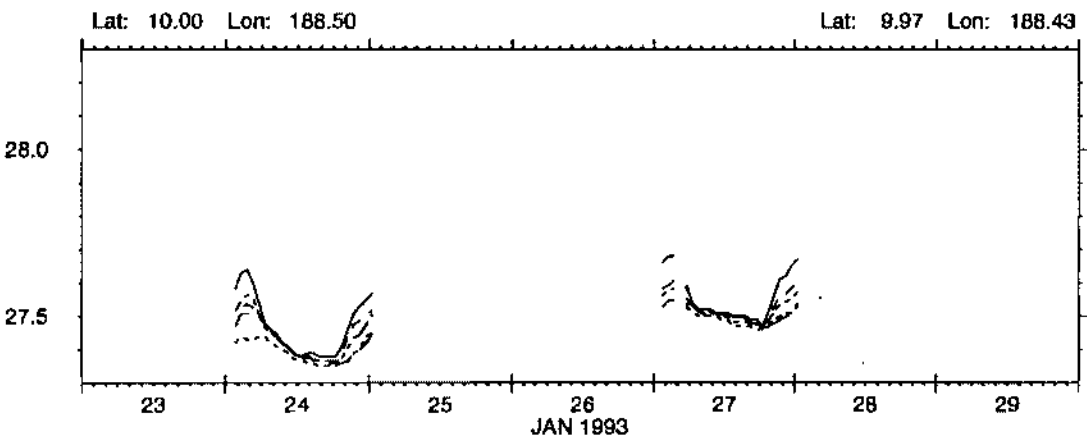
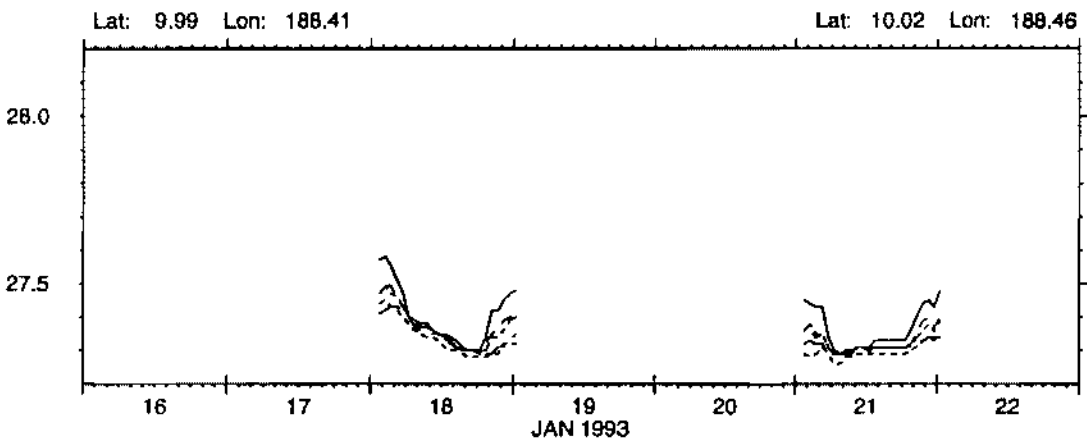
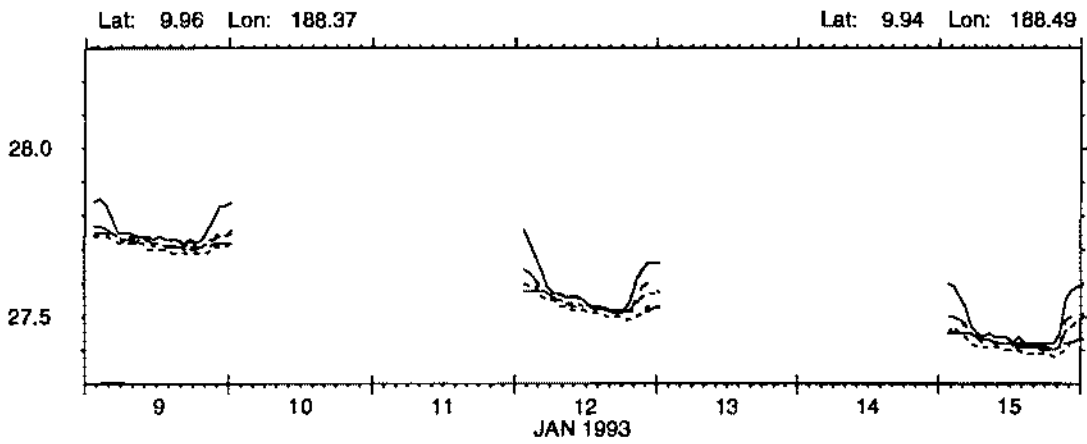
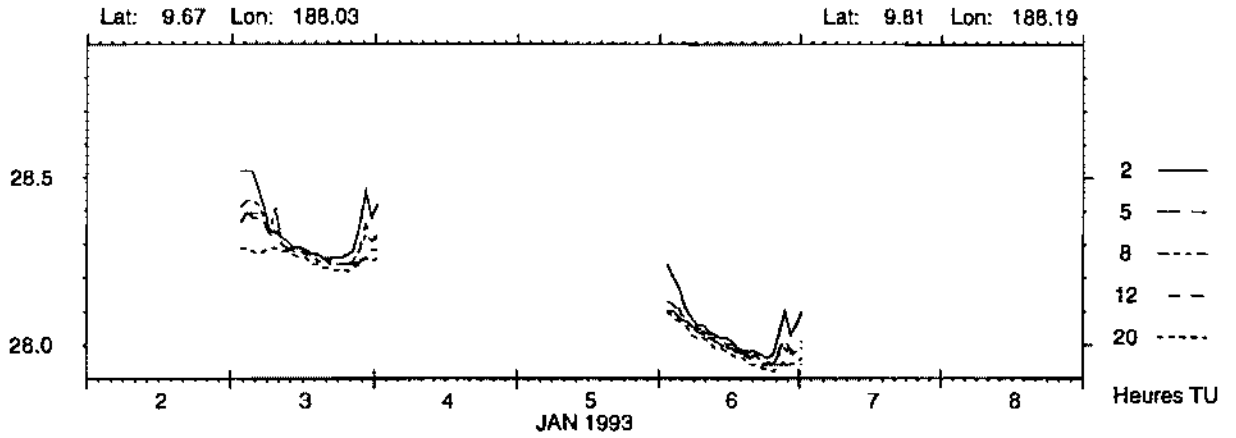
02678



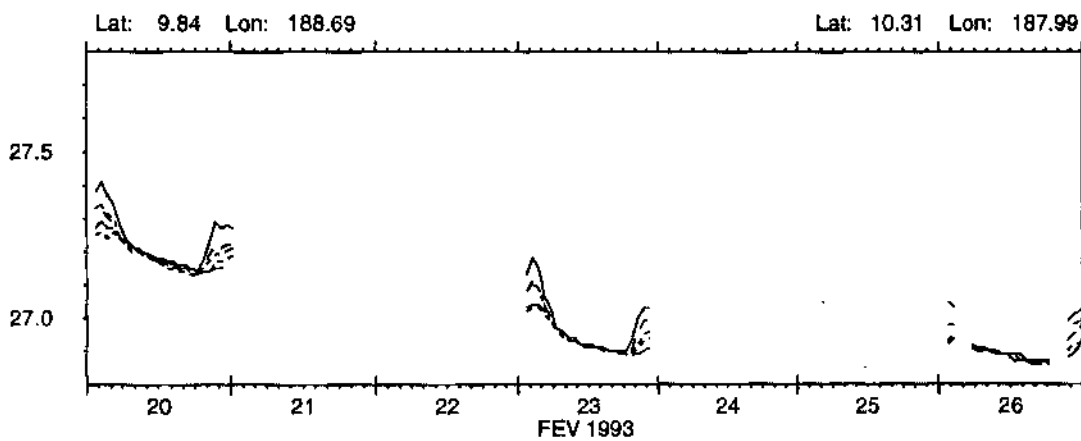
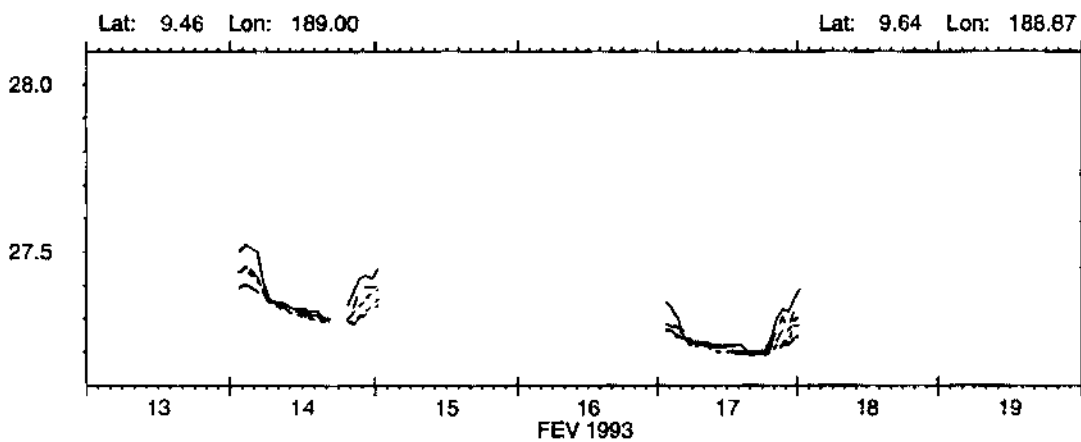
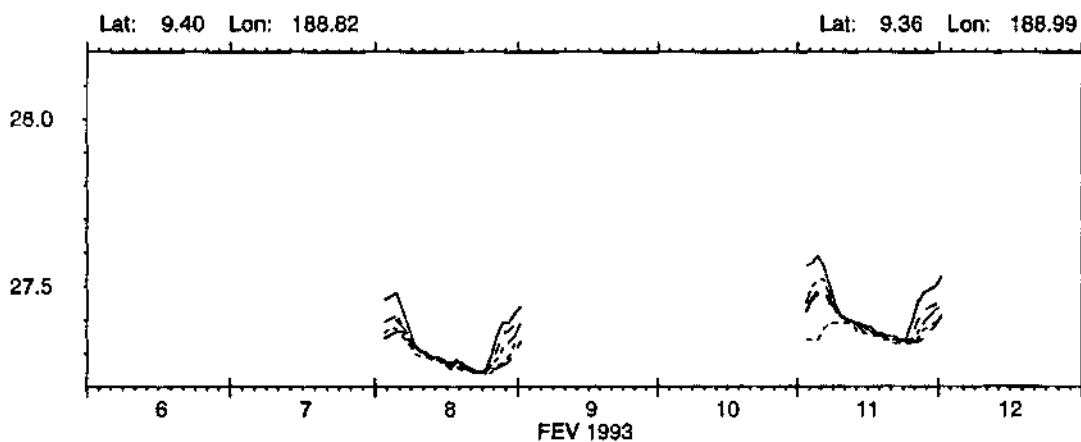
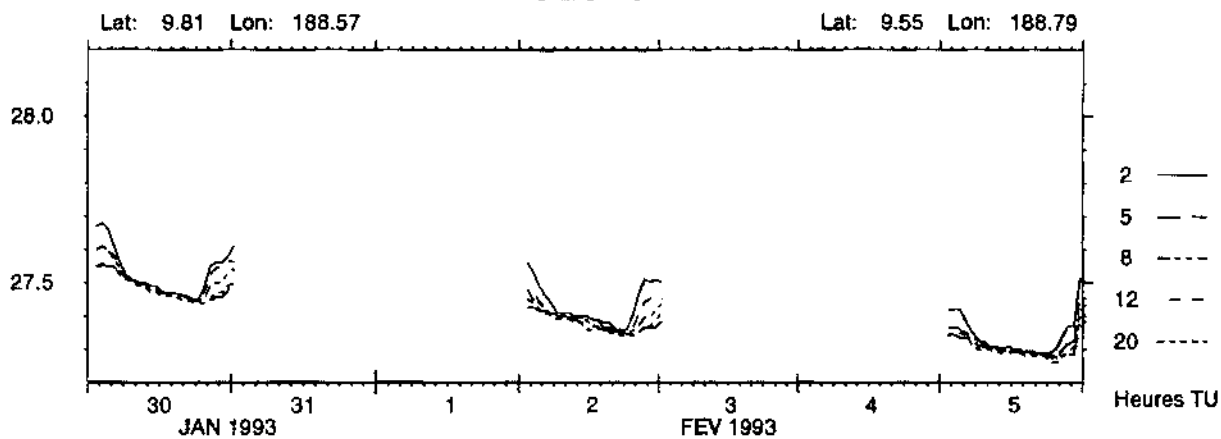
02678



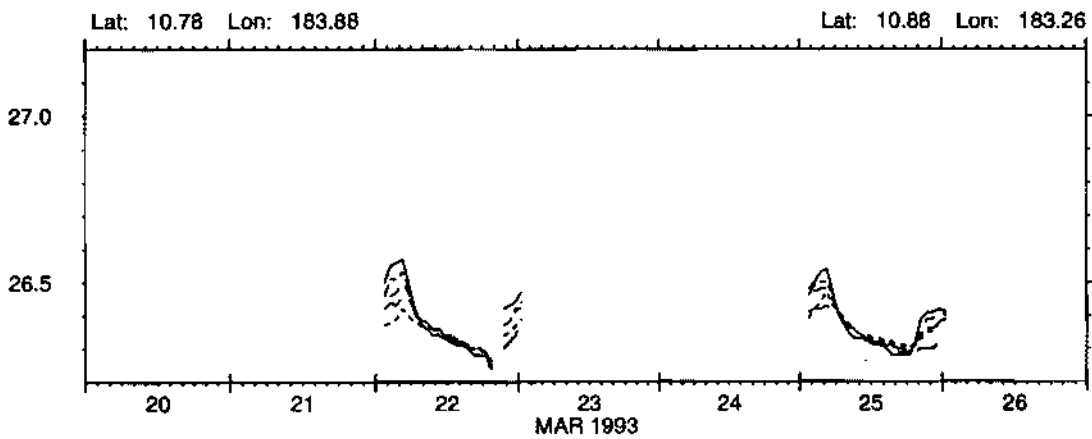
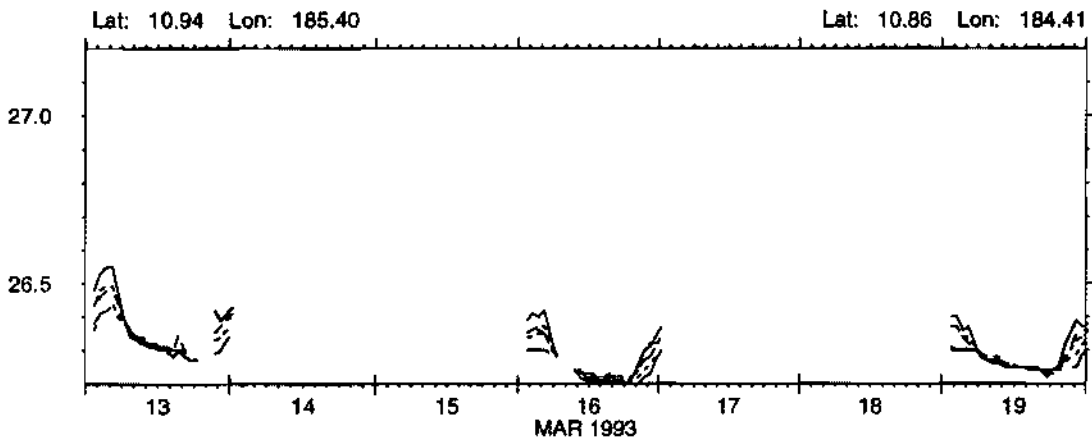
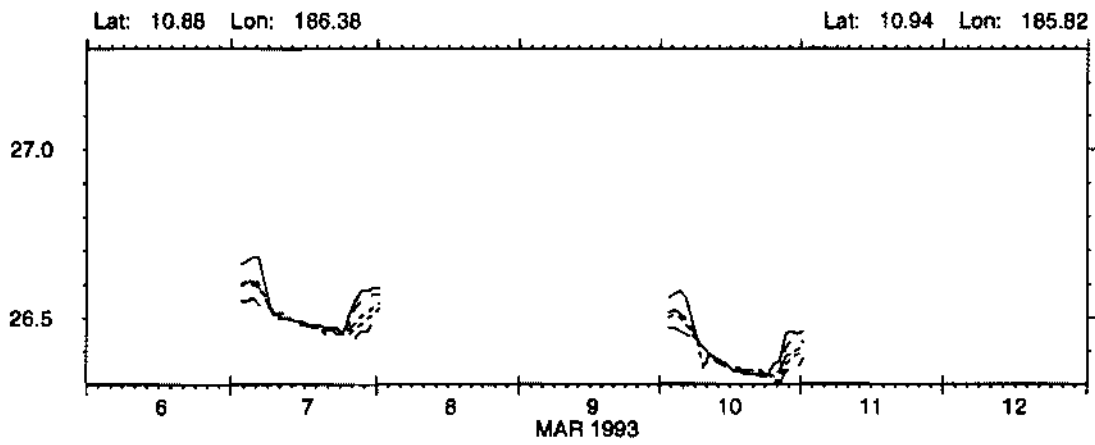
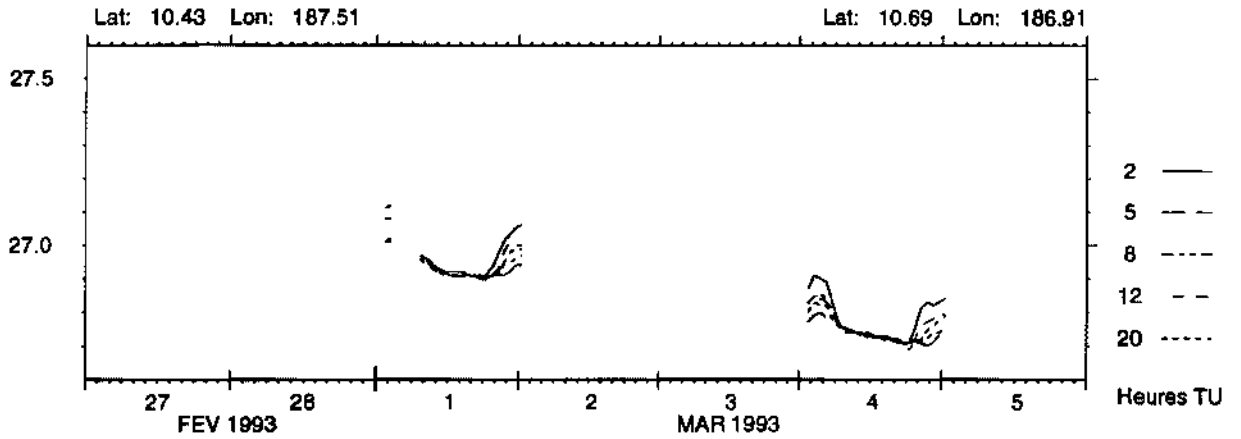
02678



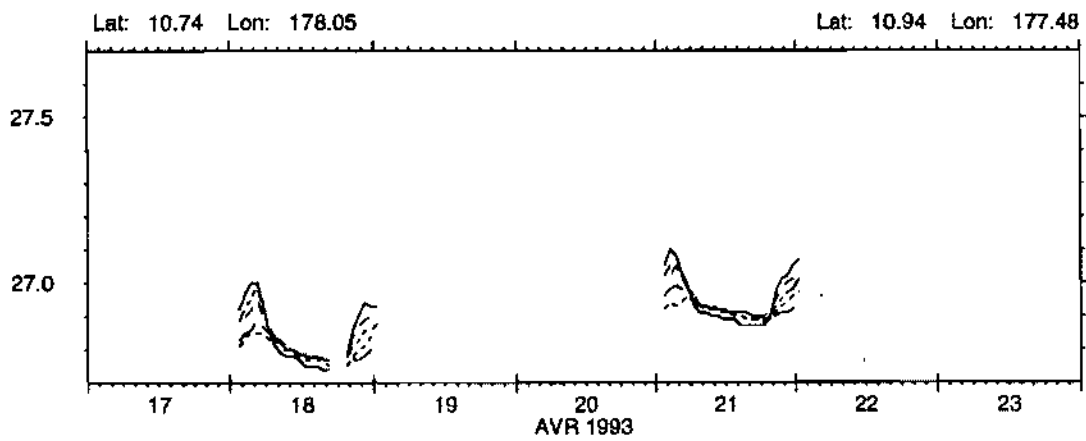
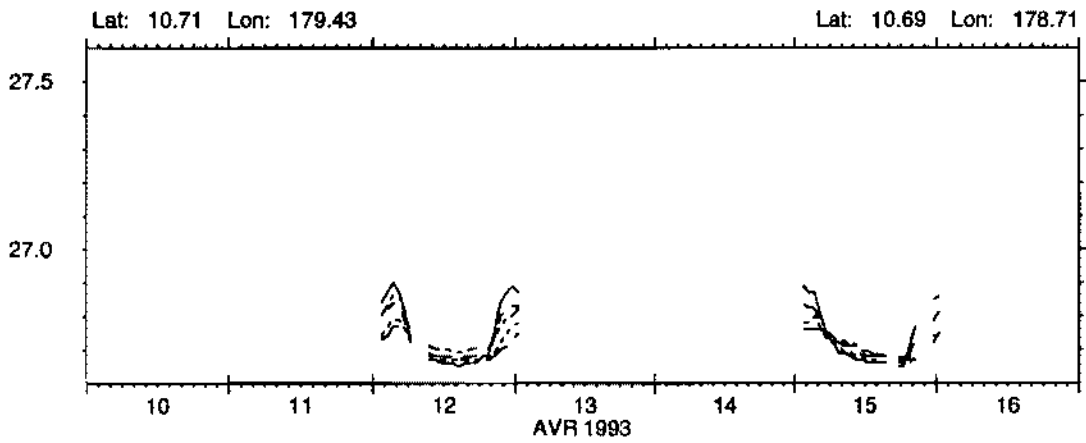
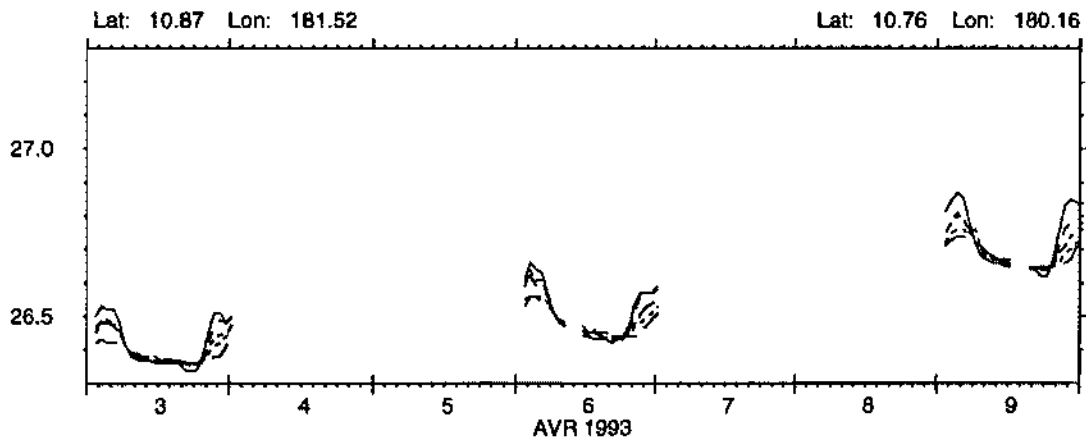
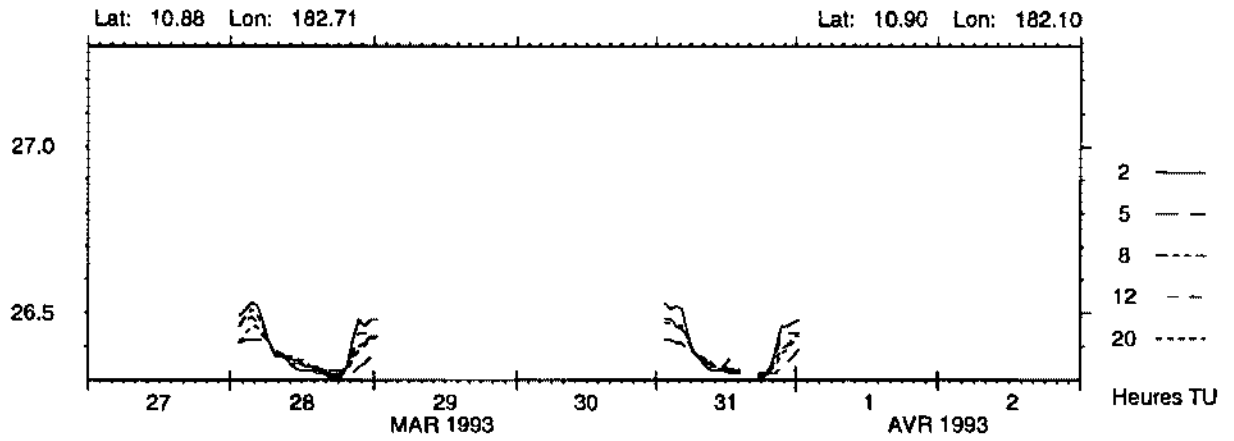
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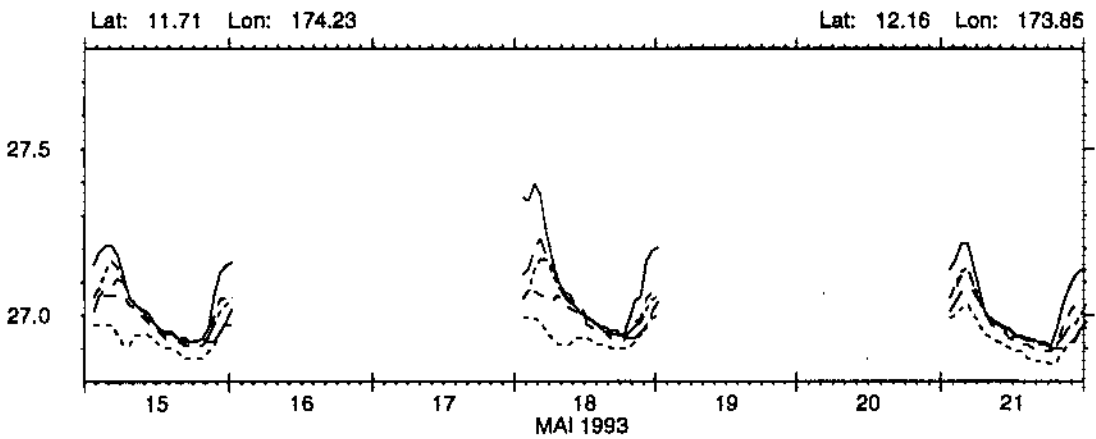
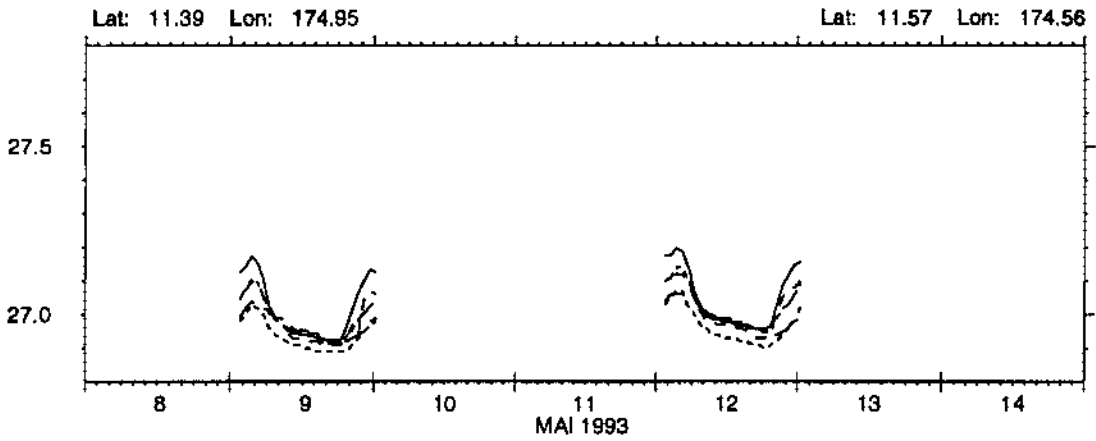
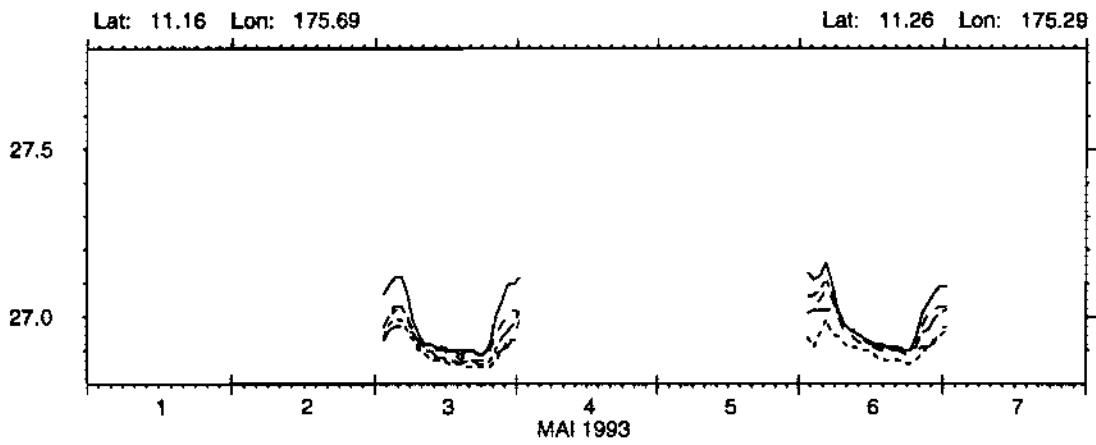
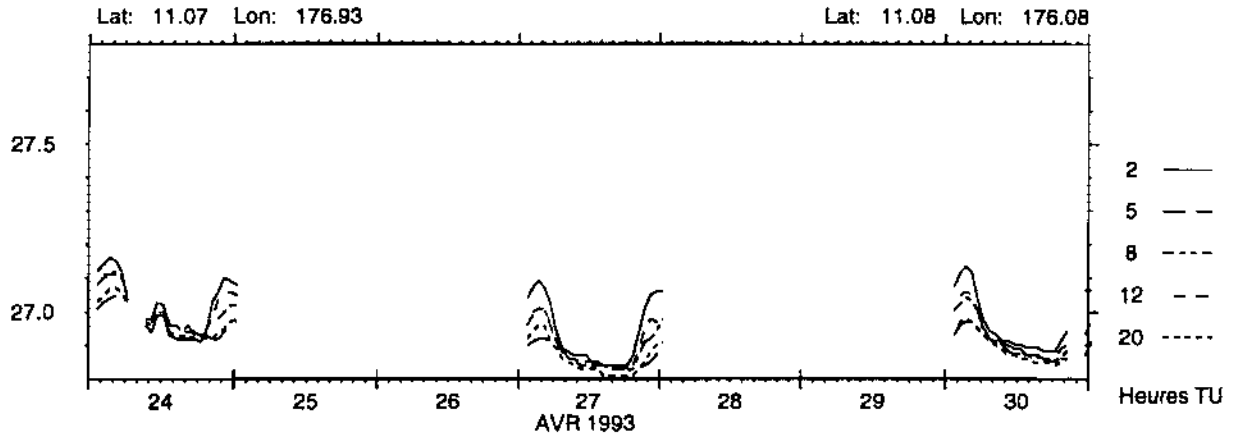
02678



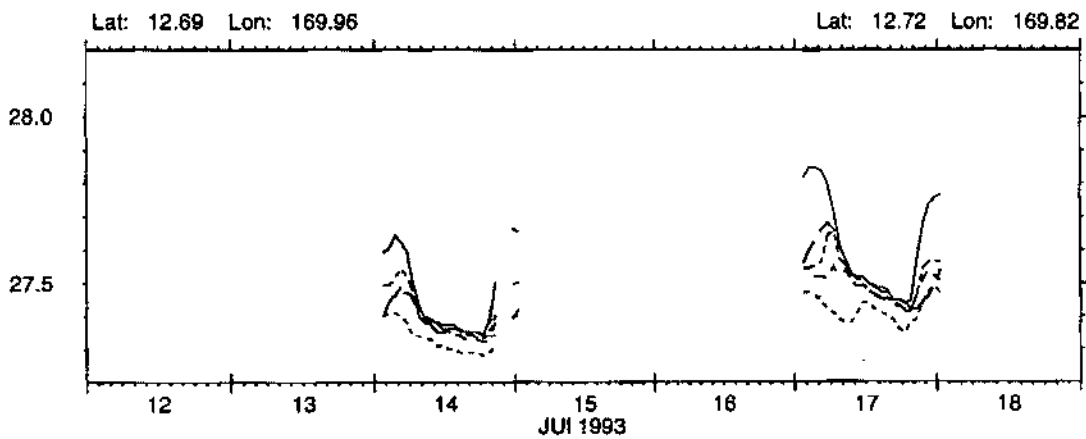
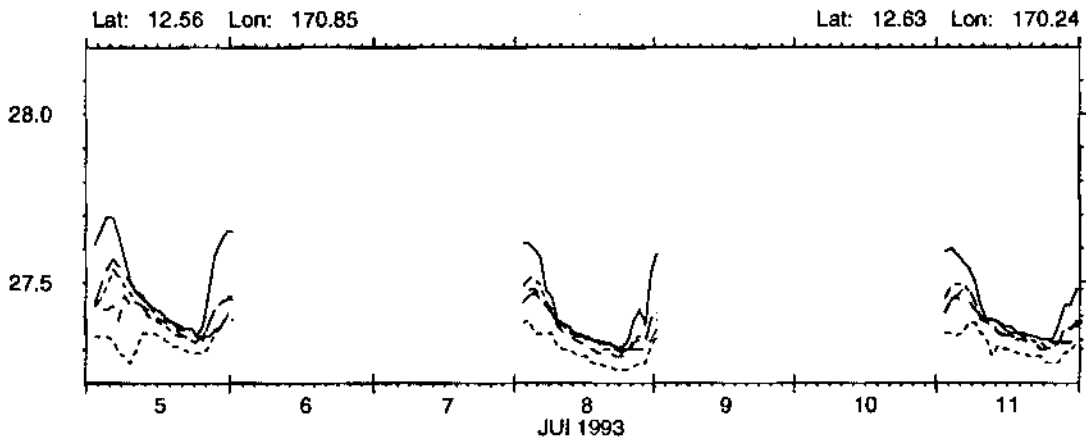
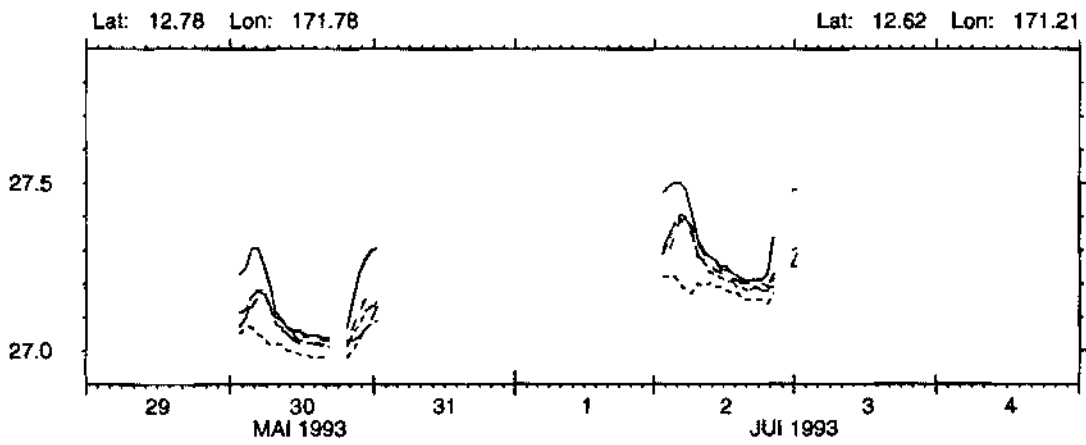
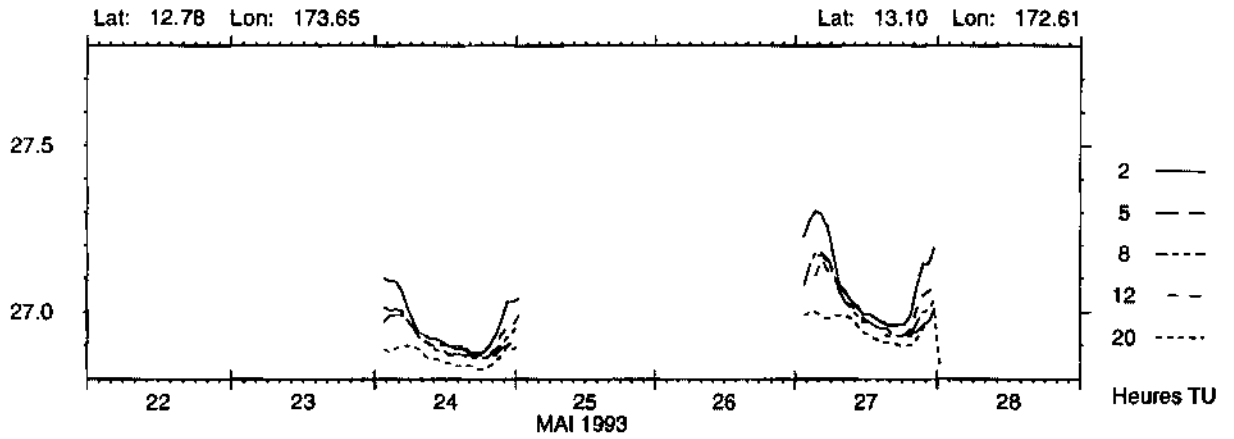
02678



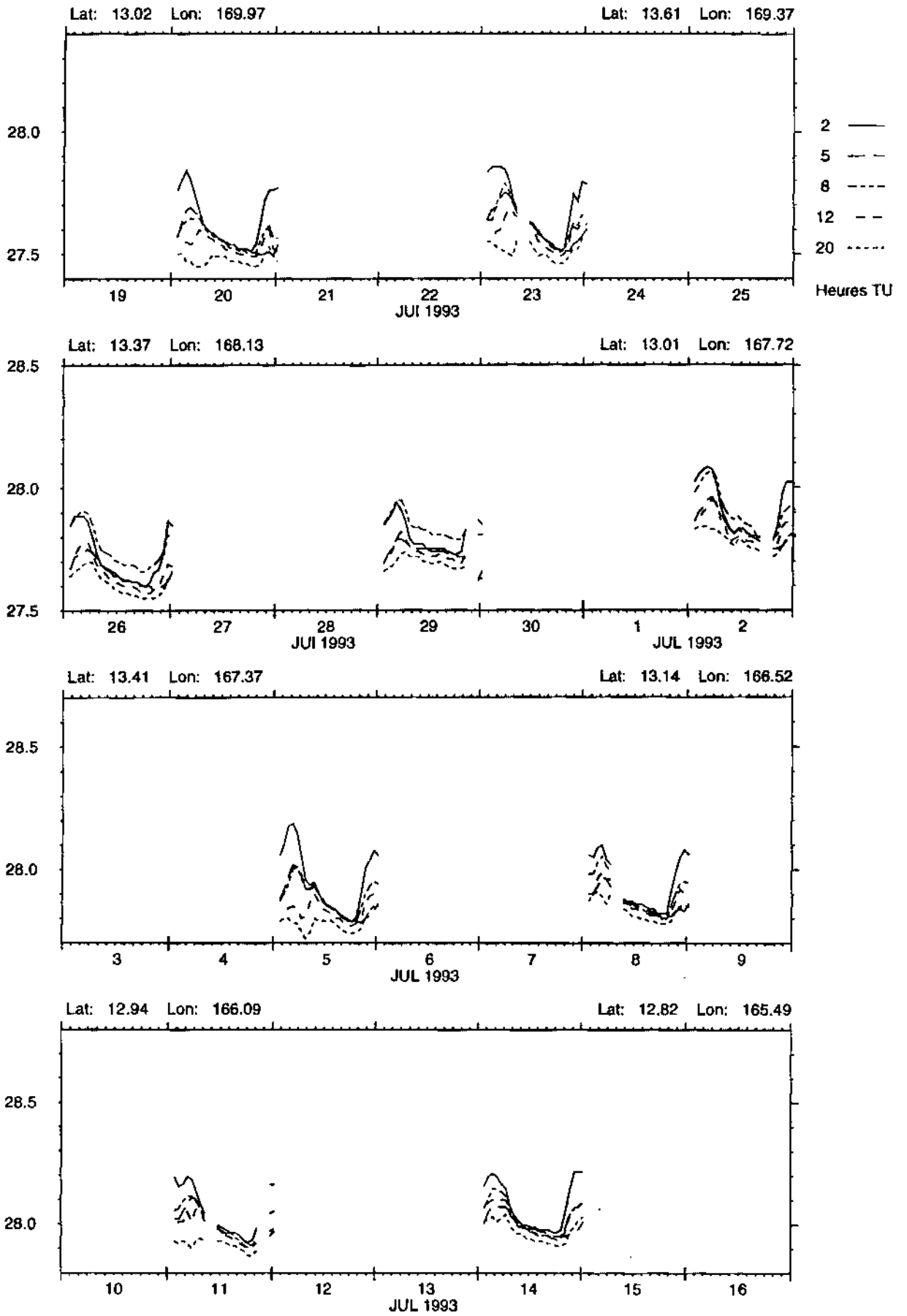
02678



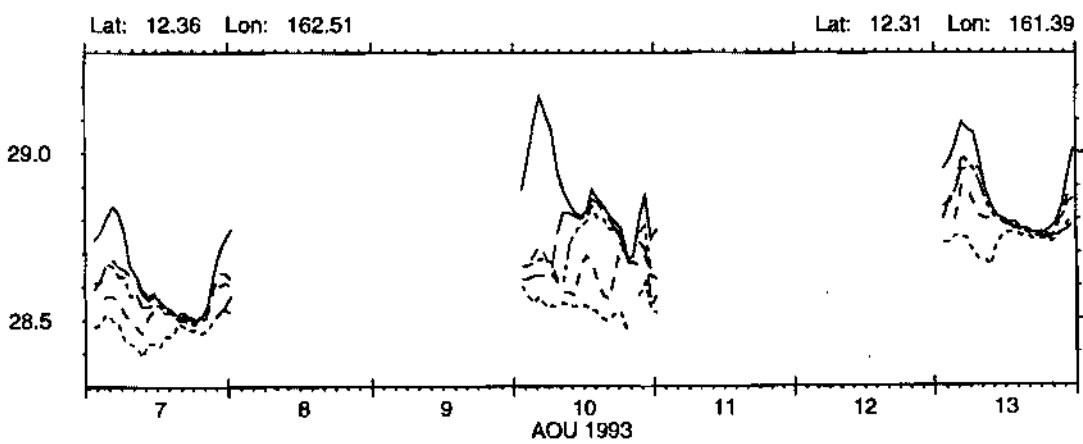
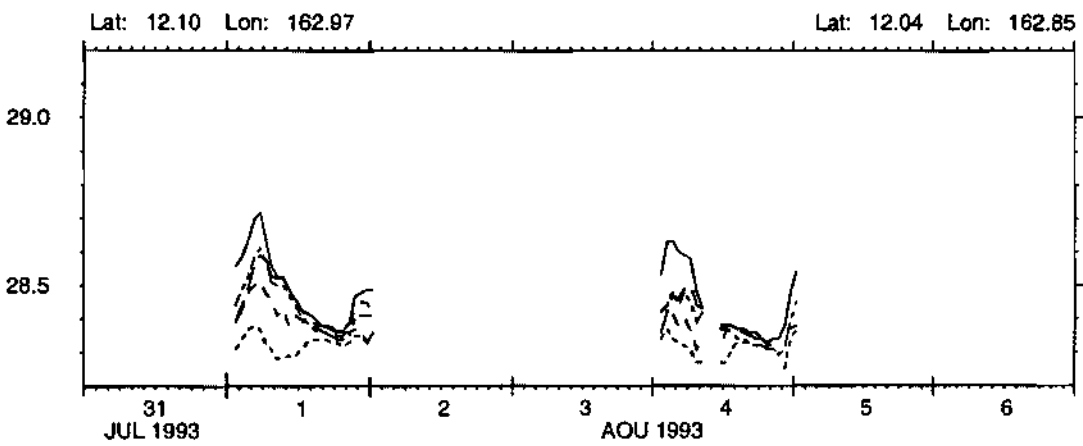
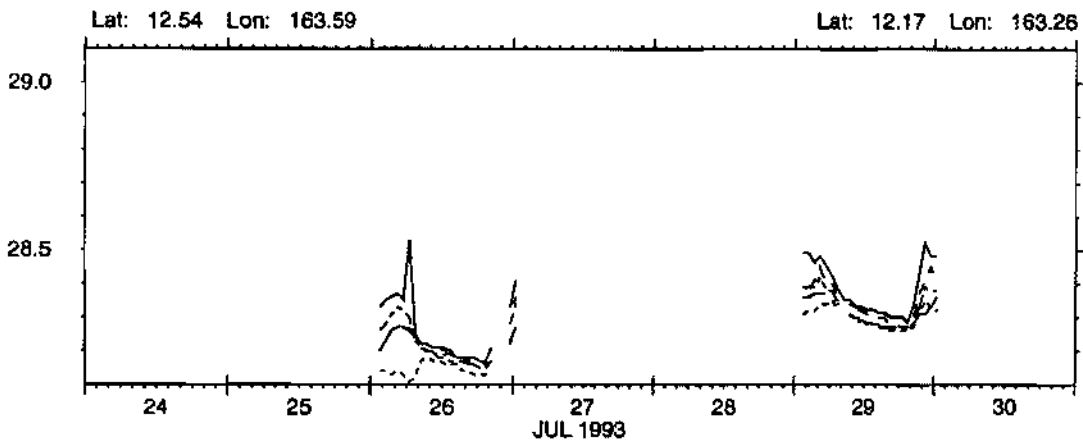
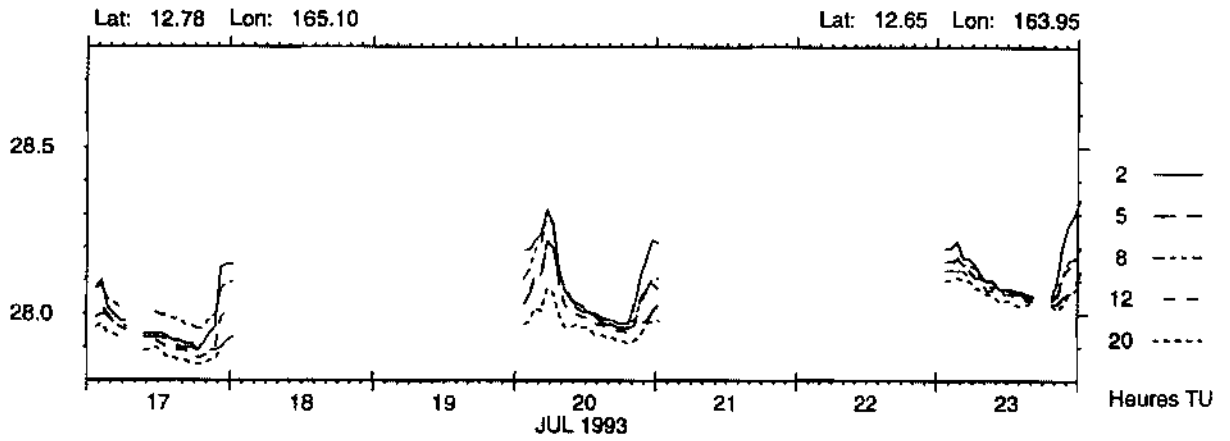
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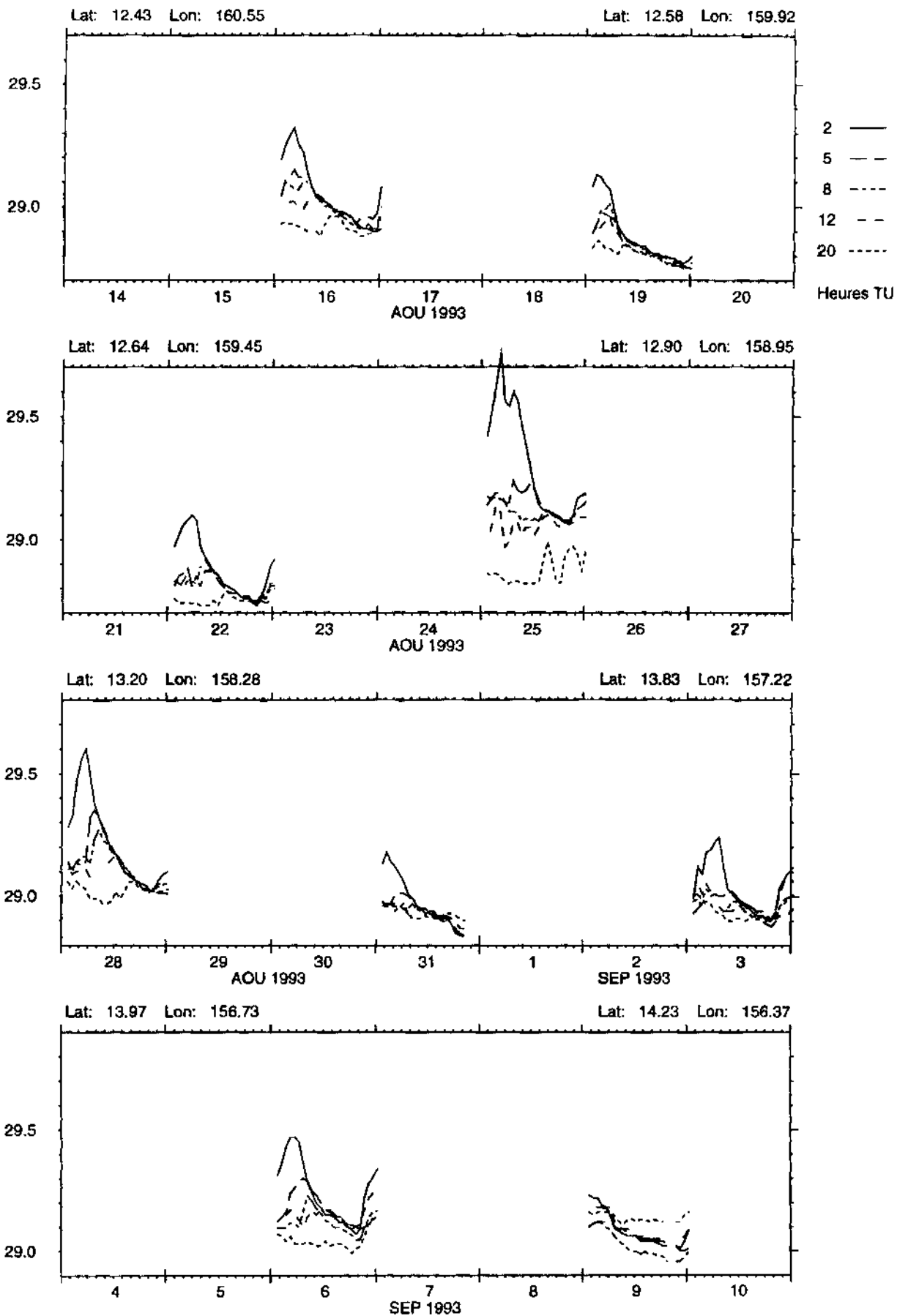
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Bouée dérivante BODEGA n° 2679

Date début et position : 14/08/1992 à 2.03°N, 165.06°E

Launch date and position

Date fin et position : 08/07/1994 à 18.64°N, 159.73°E

End date and position

Ancre flottante perdue le 21/8/93. Données de température présentées jusqu'au 12/8/93

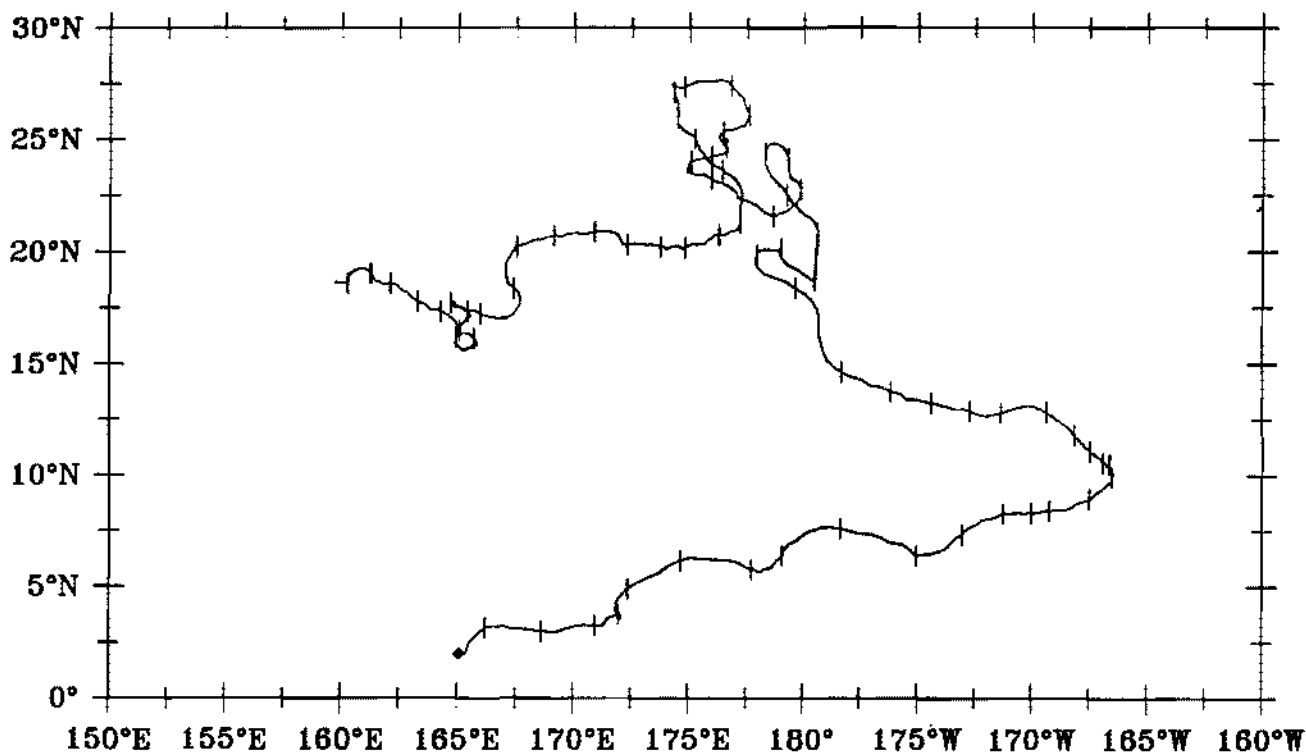
Drogue lost on August 21 1993. Temperature data not presented after August 12, 1993.

Corrections effectuées pour compenser les dérives de capteurs :

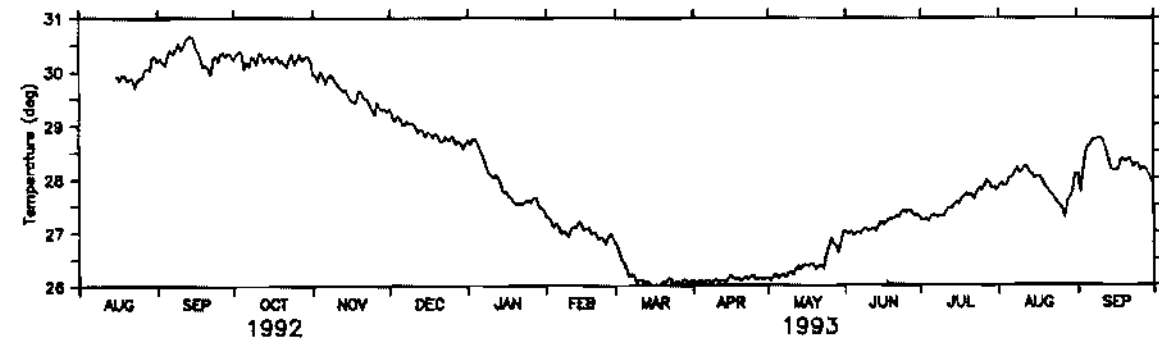
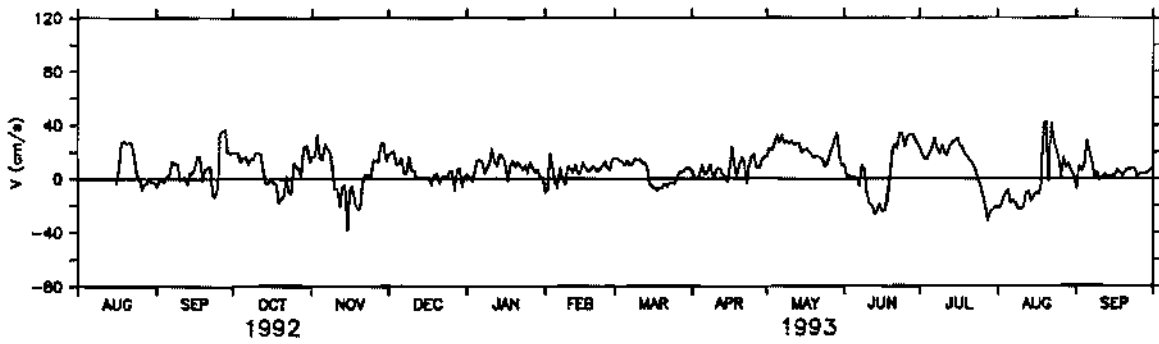
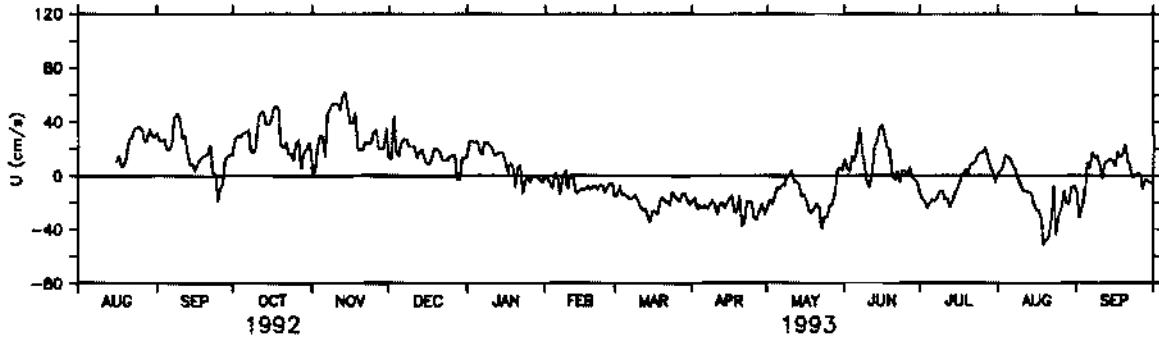
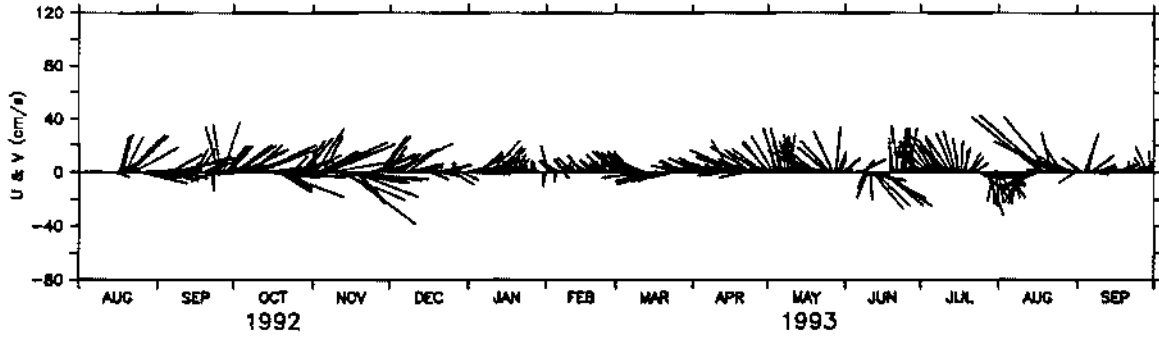
Proposed corrections to compensate sensor drifts

<ul style="list-style-type: none"> . cycle 17 (9/10/92) : -0.01 capteur 5m . cycle 30 (9/11/92) : -0.03 capteur 8m . cycle 48 (02/01/93) : -0.05 capteur 8m <li style="padding-left: 20px;">-0.03 capteur 20m . cycle 55 (23/01/93) : -0.08 capteur 5m . cycle 60 (7/2/93) : -0.13 capteur 5m <li style="padding-left: 20px;">-0.03 capteur 8m . cycle 68 (3/3/93) : -0.30 capteur 5m <li style="padding-left: 20px;">-0.03 capteur 8m . cycle 81 (11/04/93) : -0.25 capteur 8m <li style="padding-left: 20px;">-0.11 capteur 20m 	<ul style="list-style-type: none"> . cycle 92 (14/05/93) : -0.19 capteur 5m <li style="padding-left: 20px;">-0.07 capteur 8m <li style="padding-left: 20px;">-0.38 capteur 20m . cycle 95 (23/05/93) : -0.15 capteur 5m . cycle 100 (07/6/93) : -0.14 capteur 5m . cycle 110 (07/7/93) : -0.19 capteur 5m <li style="padding-left: 20px;">-0.17 capteur 8m <li style="padding-left: 20px;">-0.11 capteur 12m . cycle 113 (16/7/93) : -0.14 capteur 5m . cycle 116 (25/7/93) : -0.12 capteur 5m <li style="padding-left: 20px;">-0.13 capteur 12m
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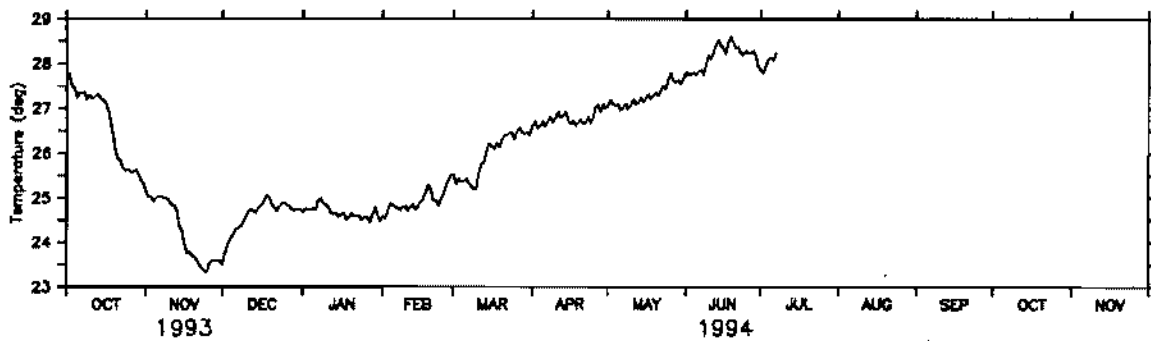
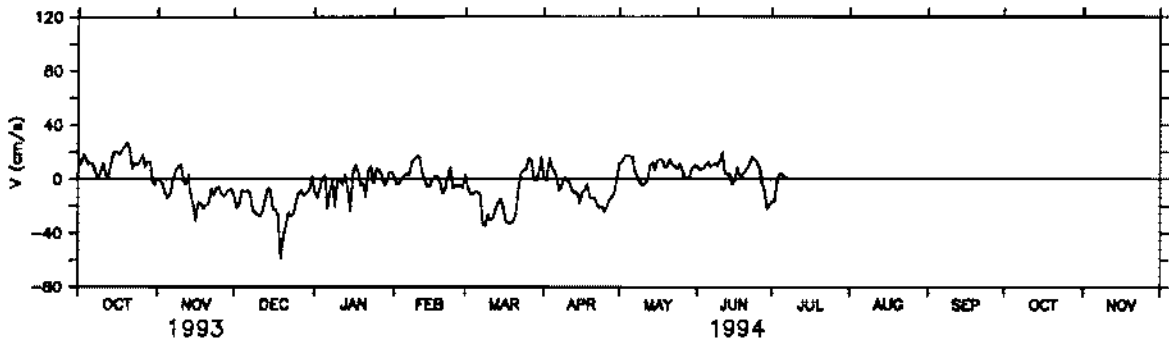
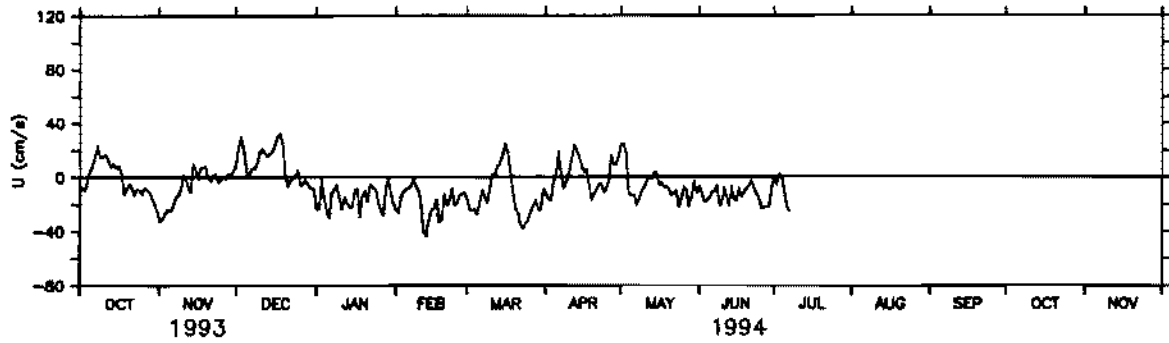
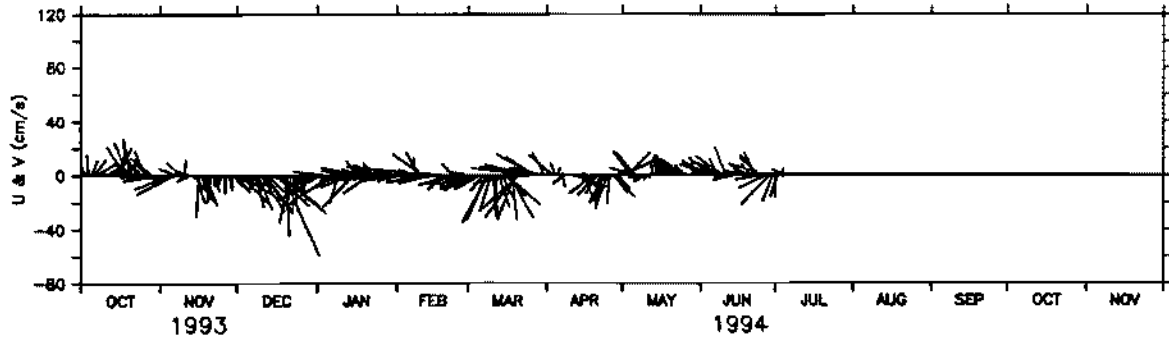
2679



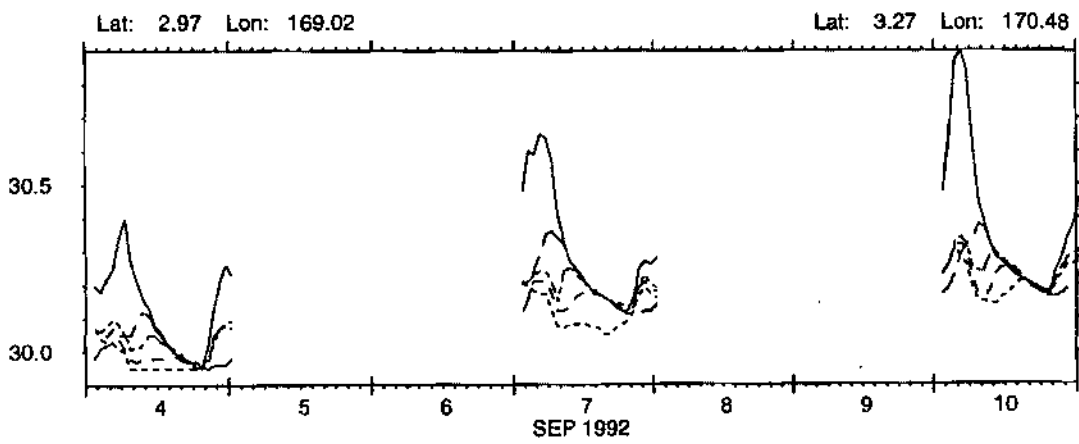
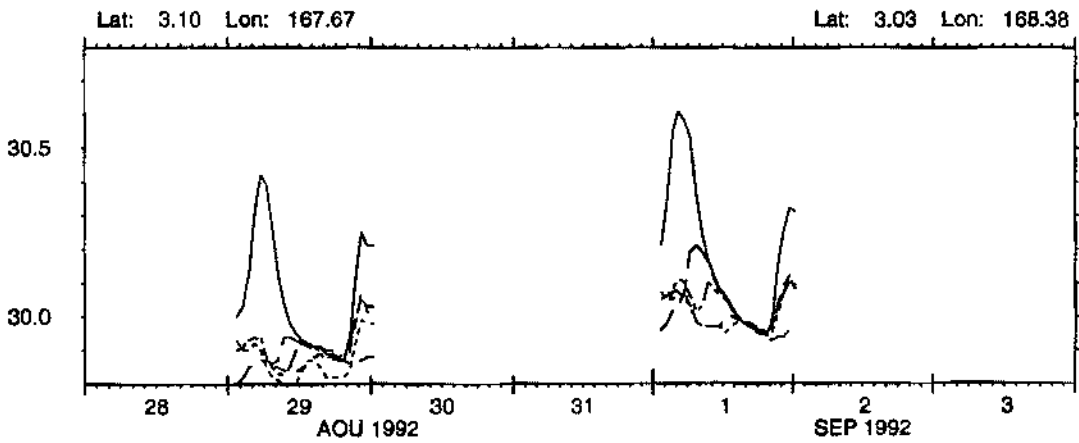
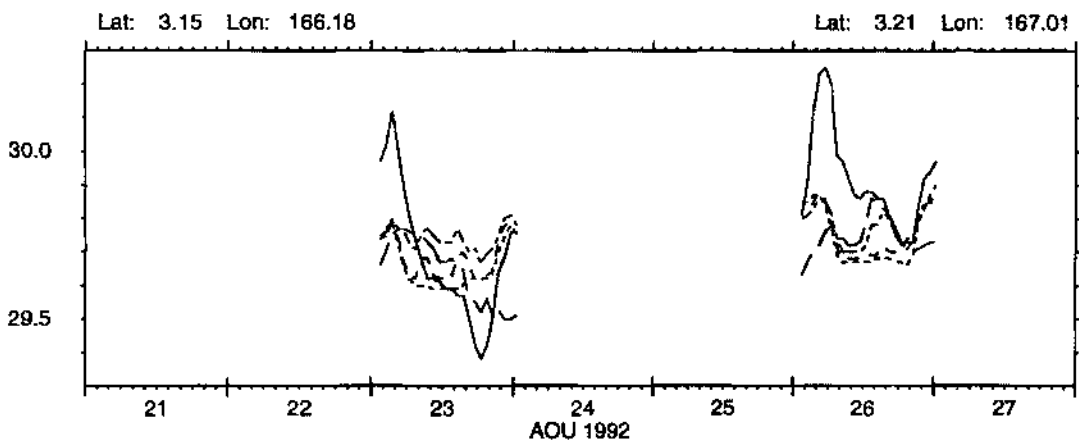
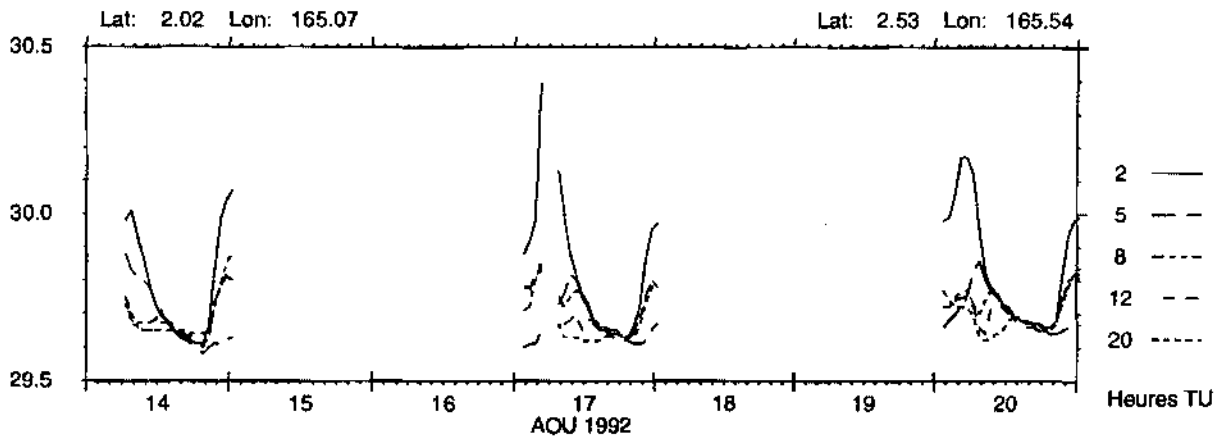
N°2679



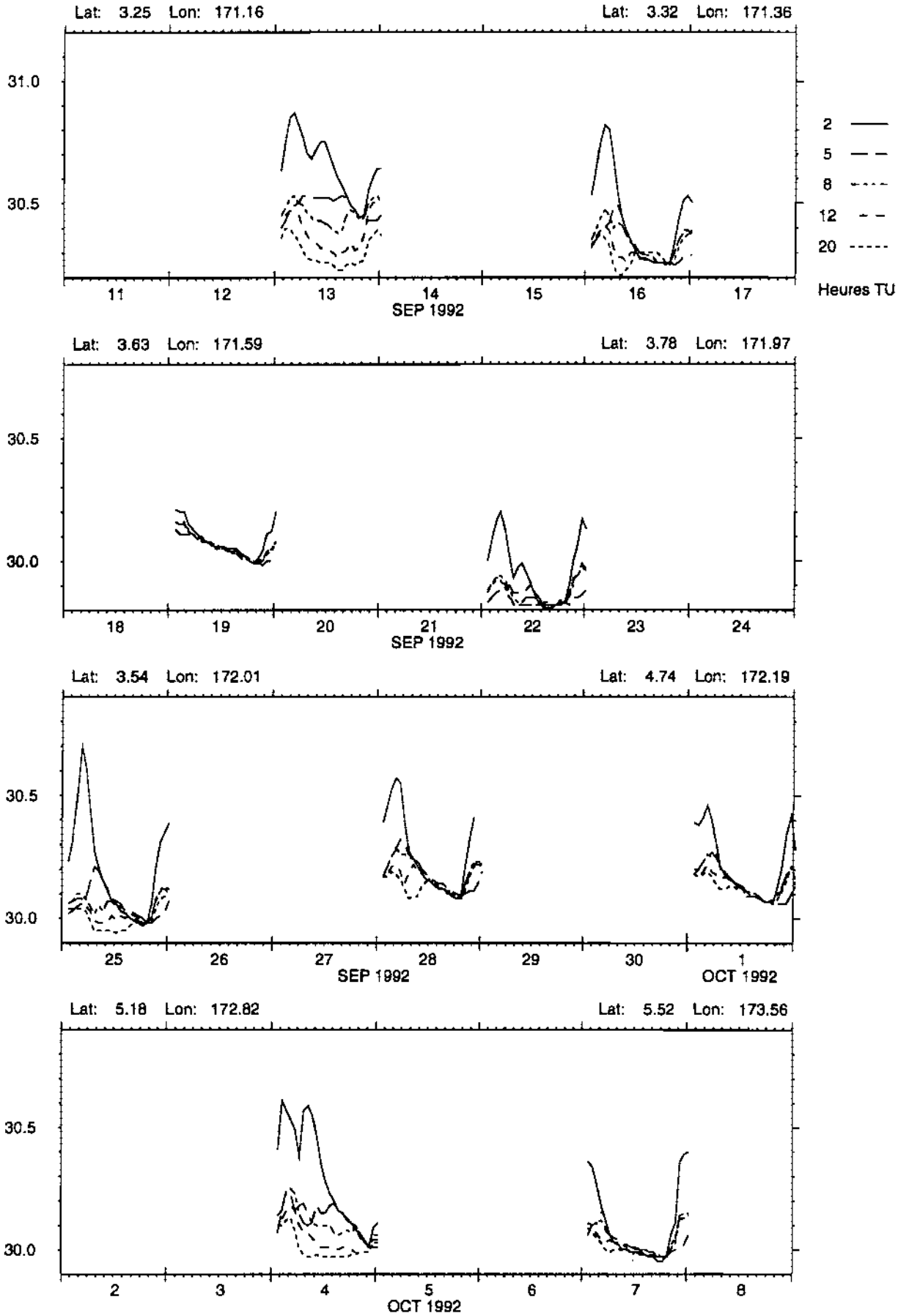
N°2679



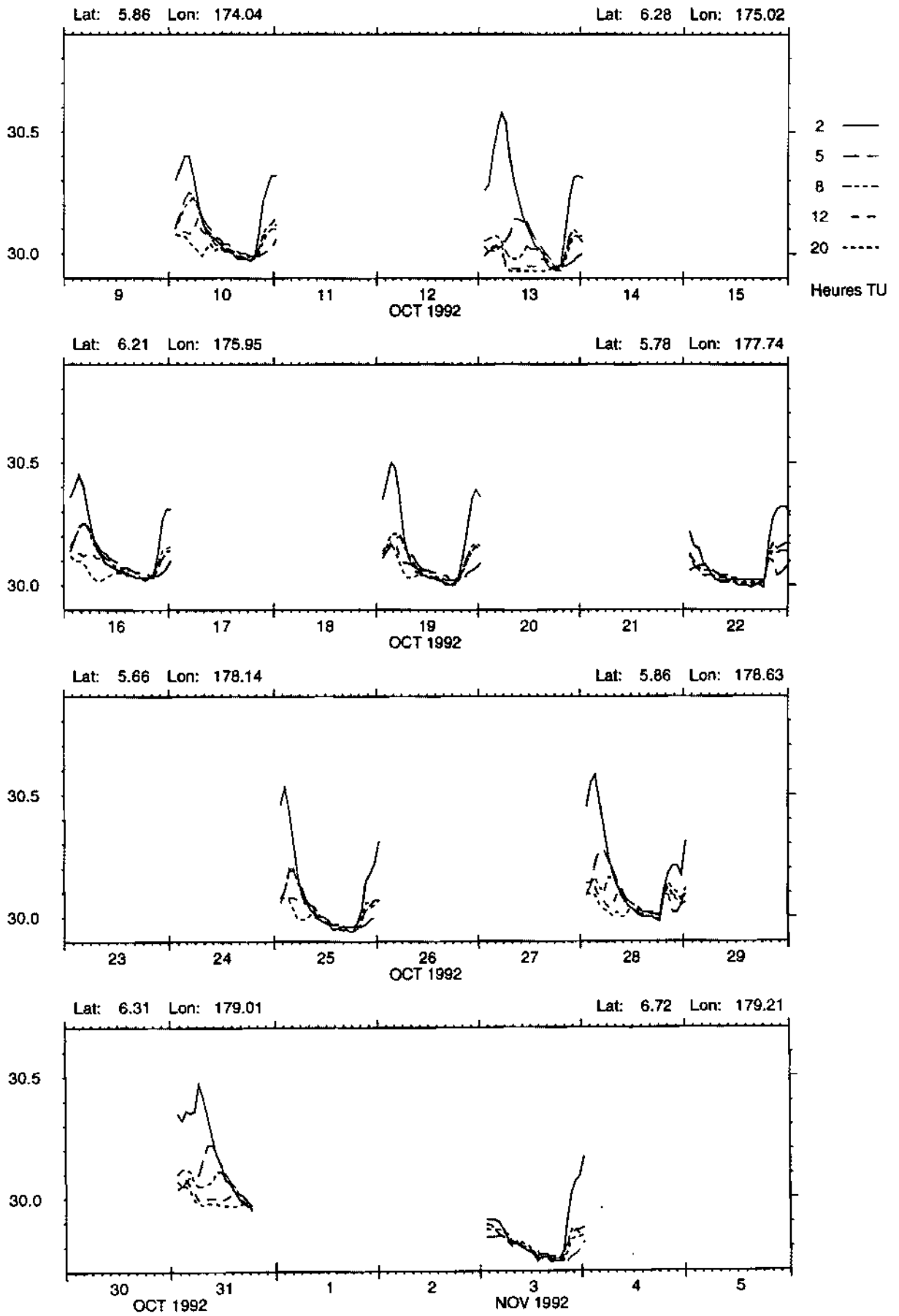
02679



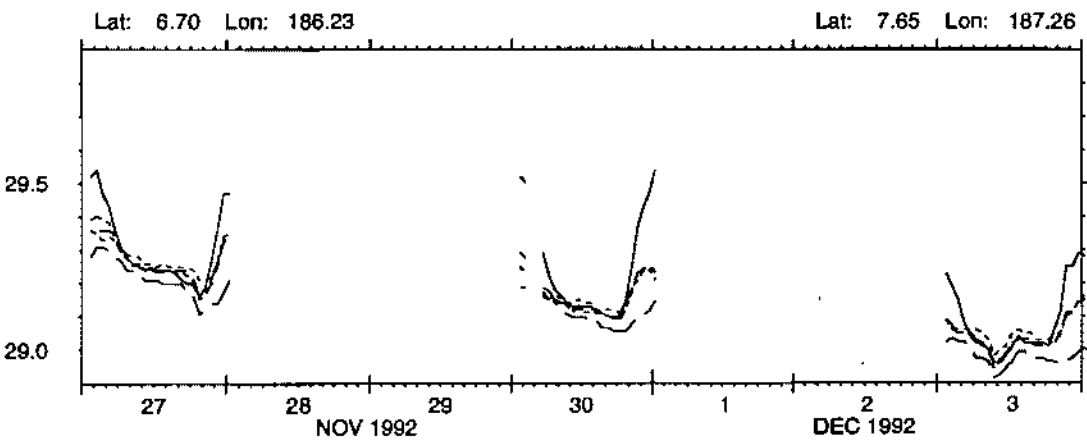
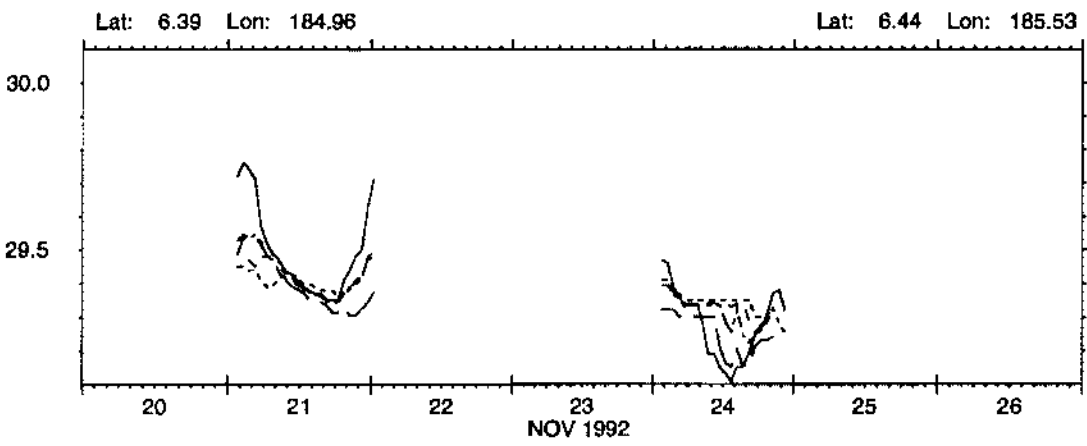
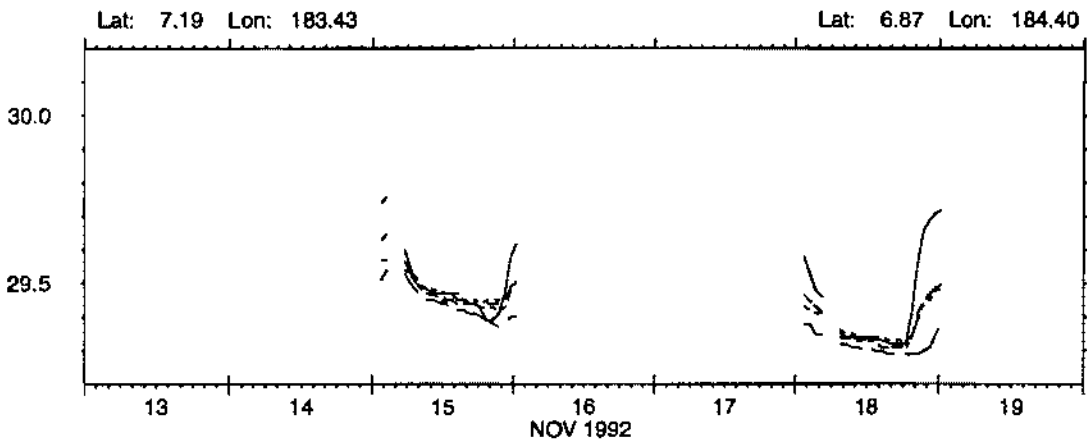
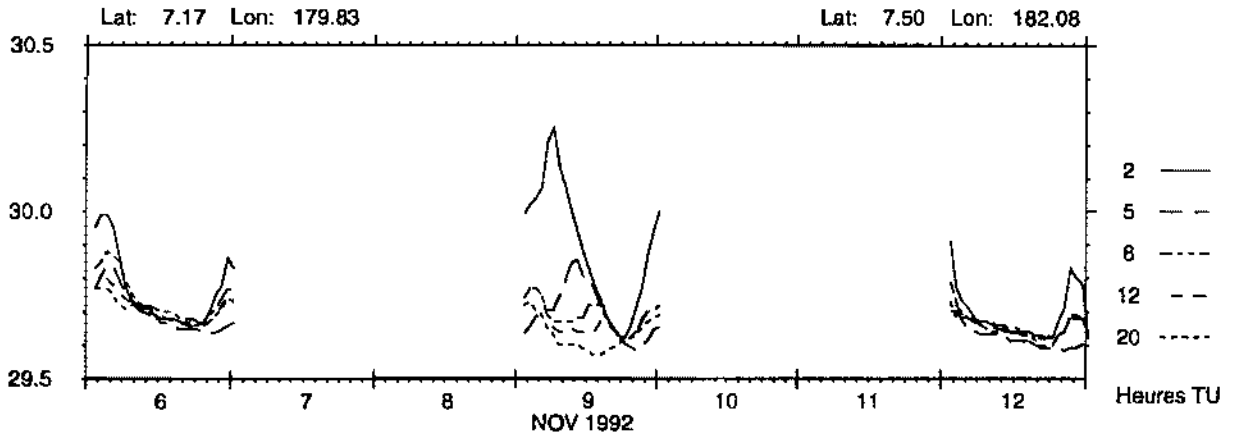
02679



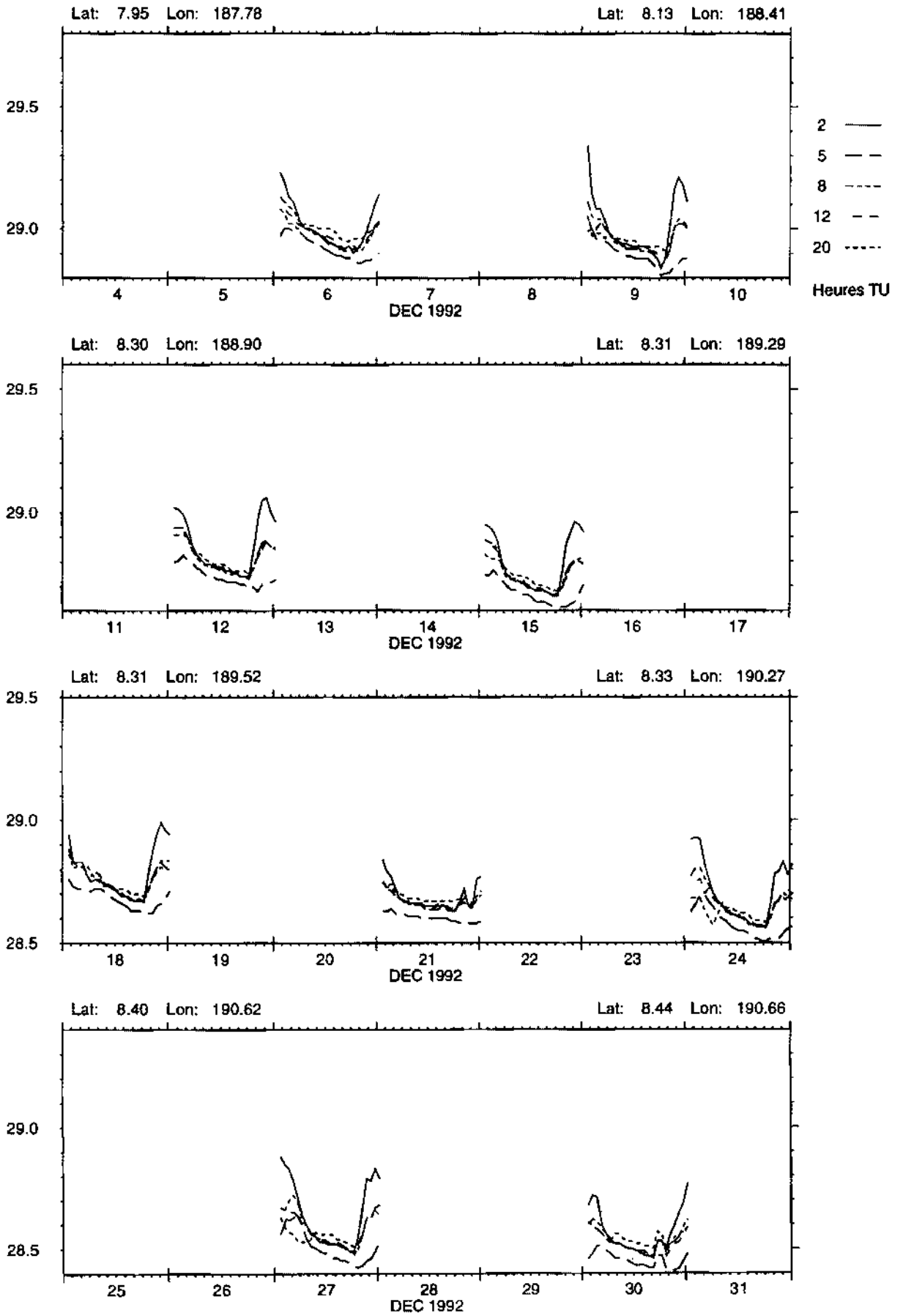
02679



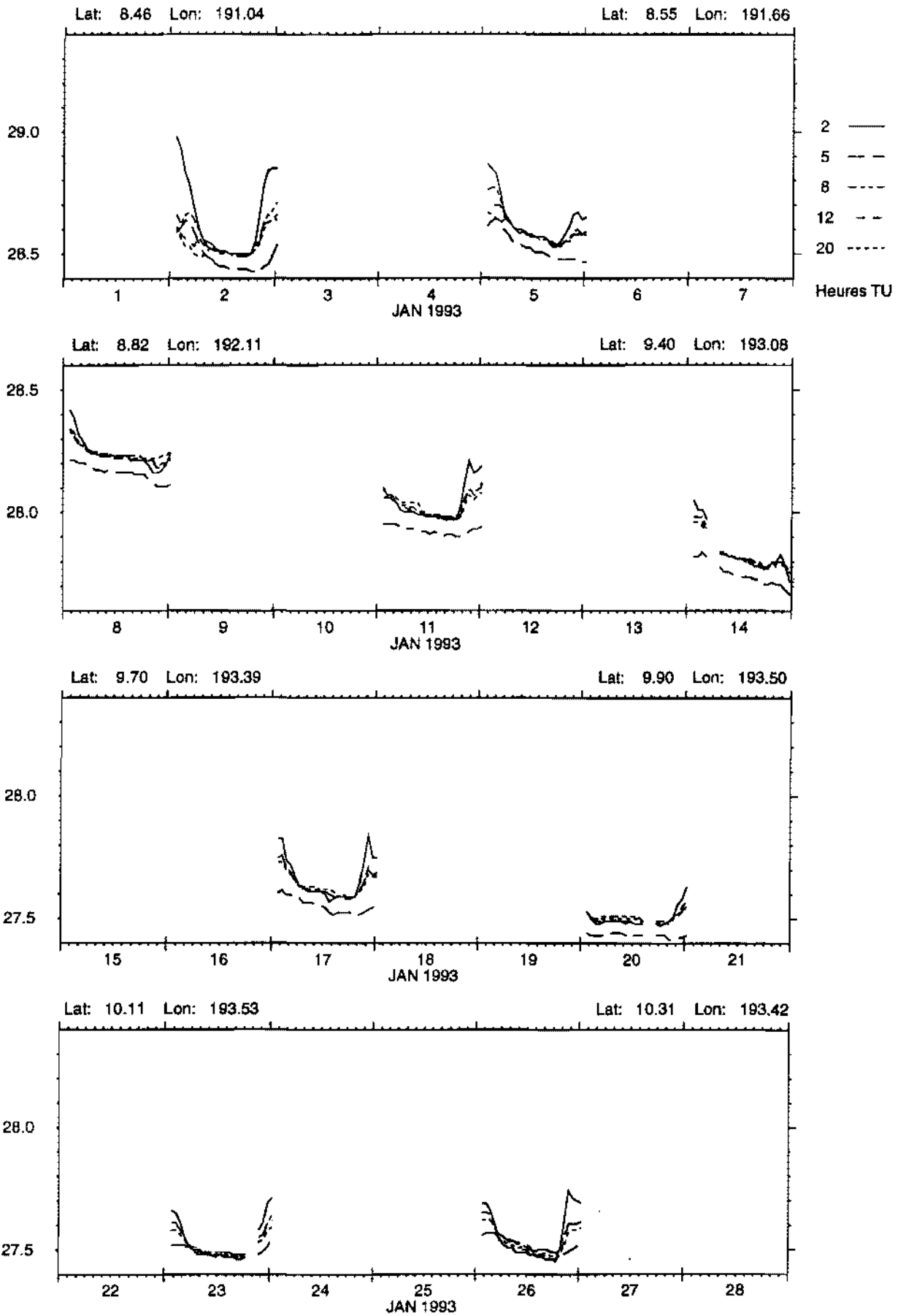
02679



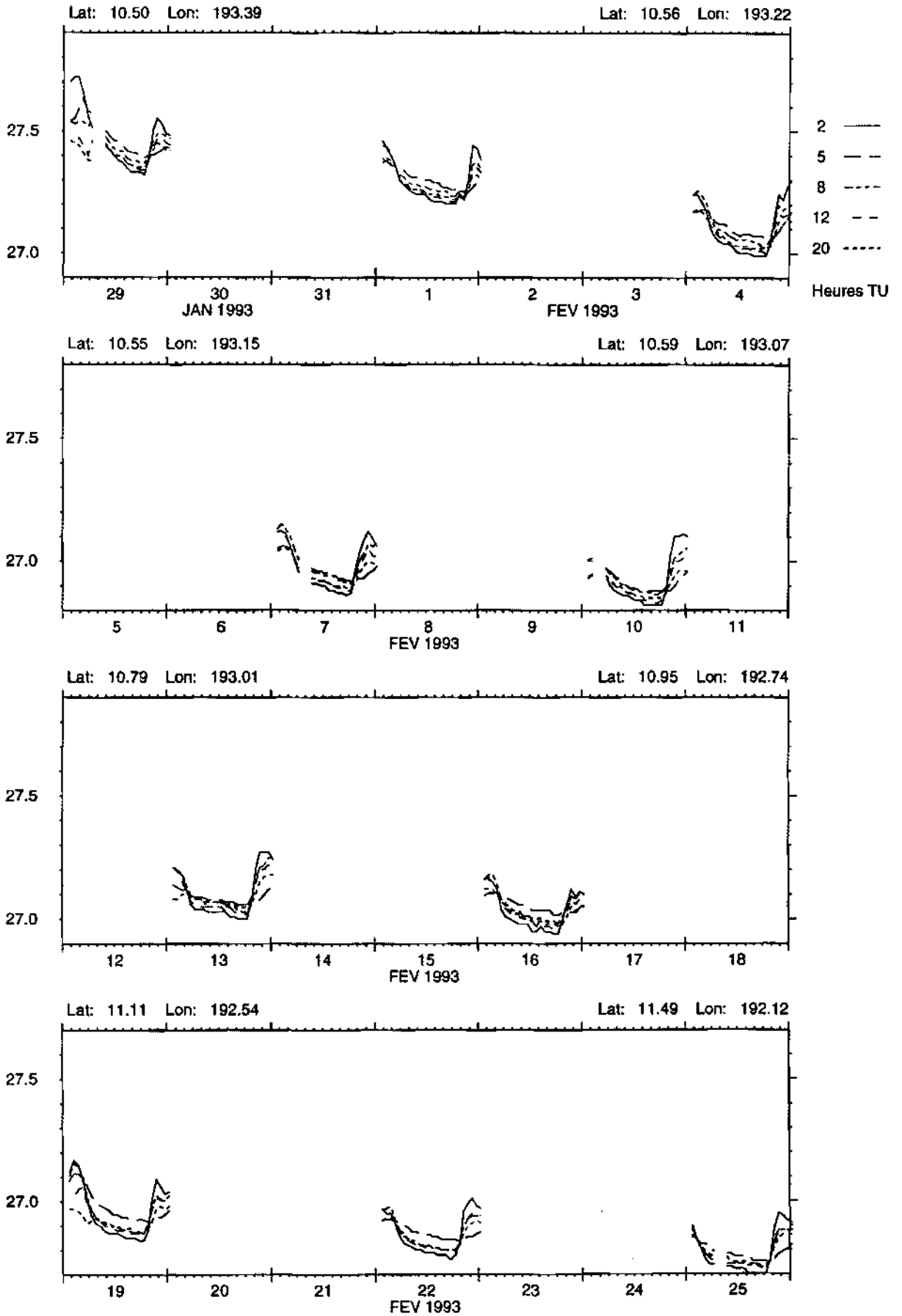
02679



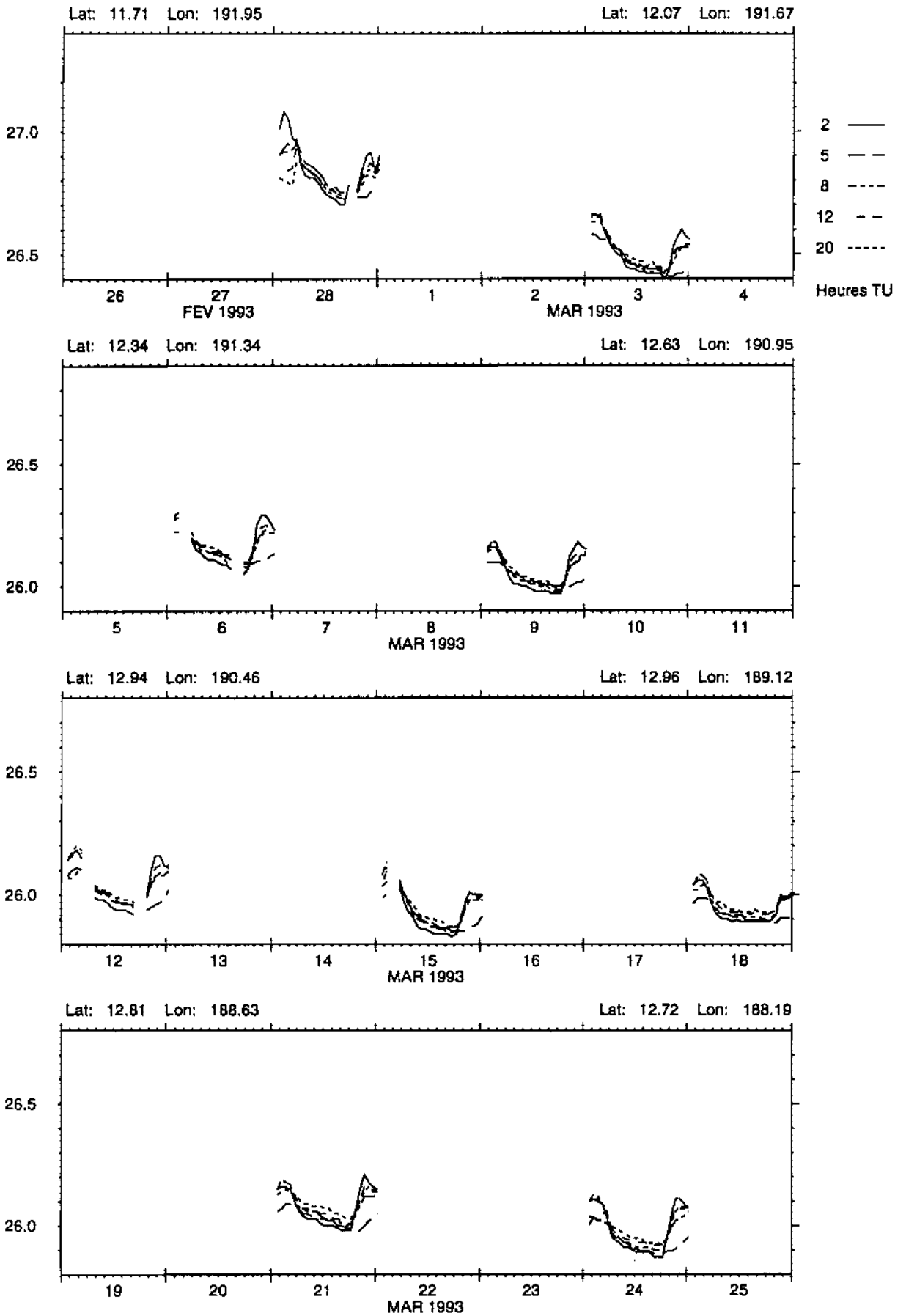
02679



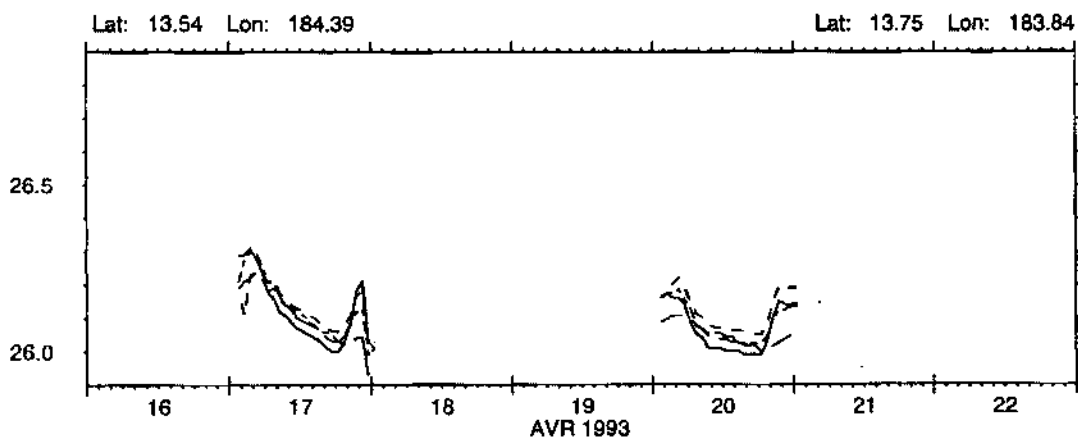
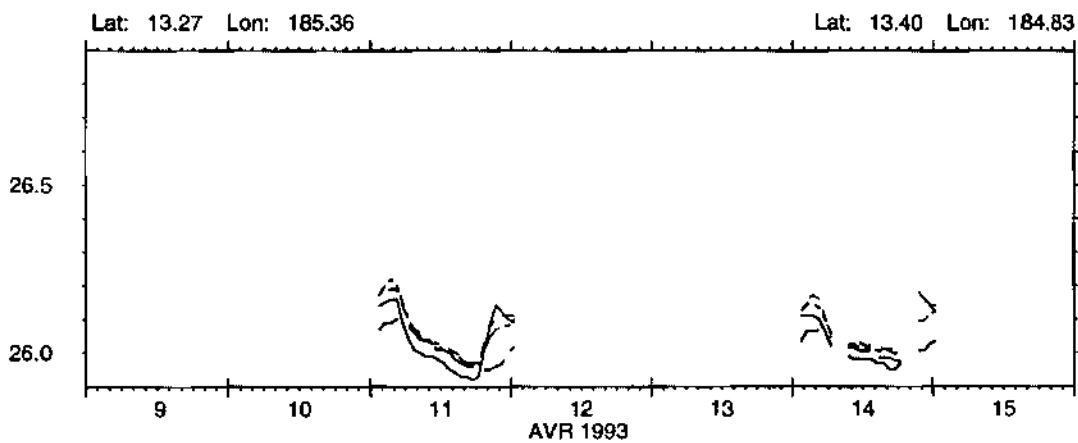
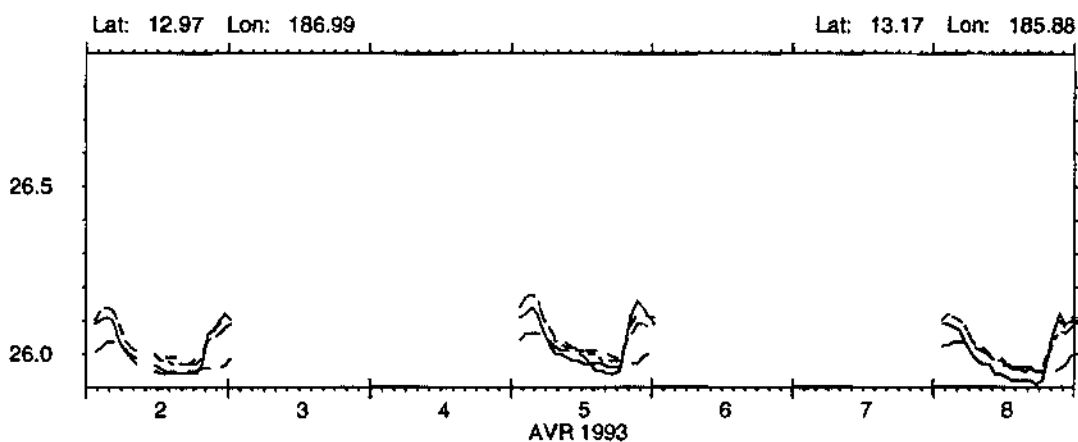
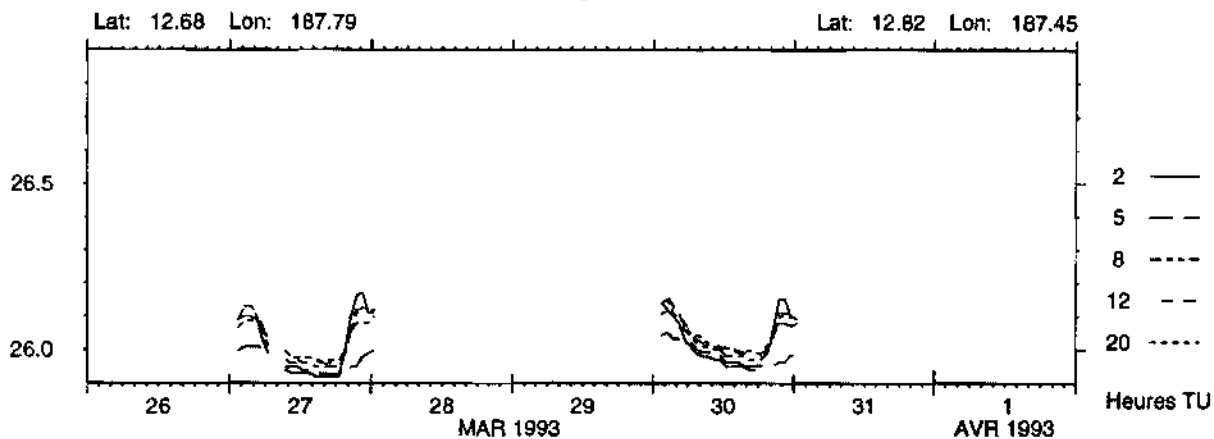
02679



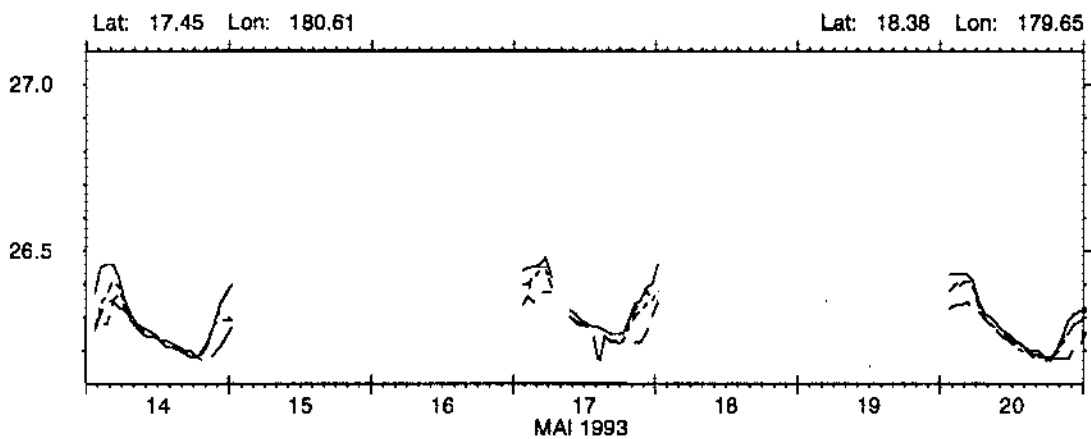
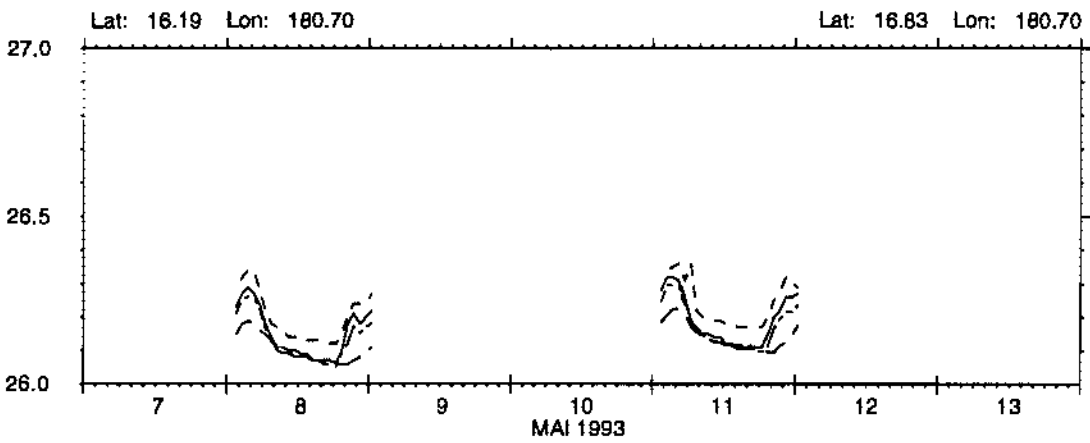
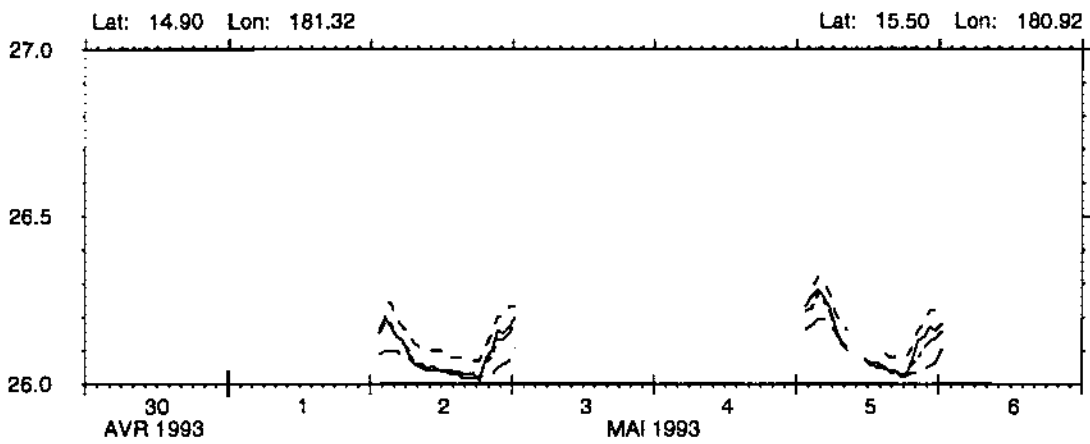
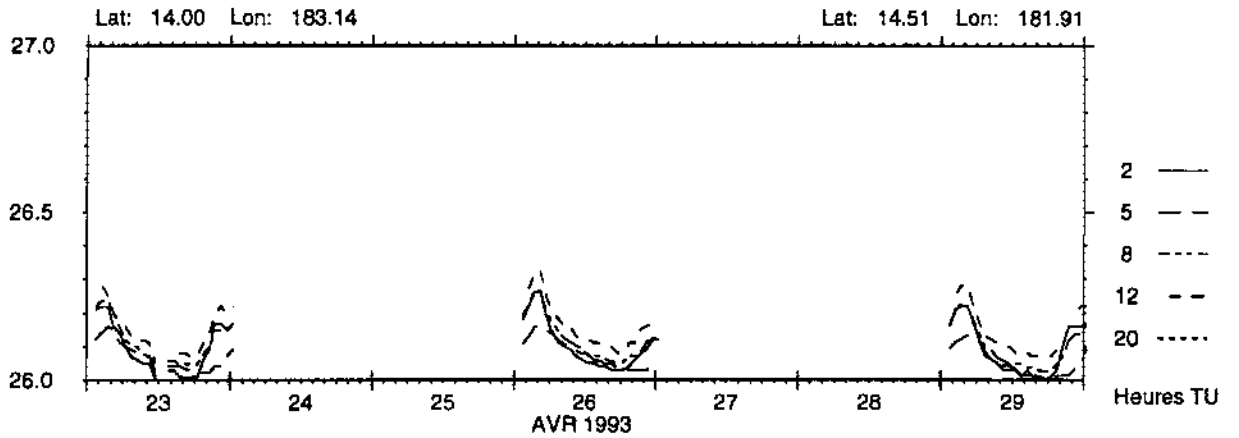
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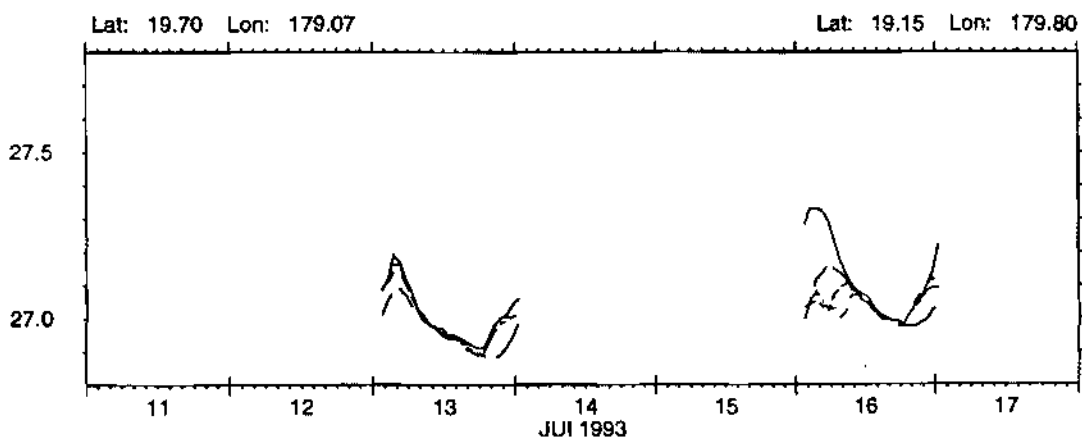
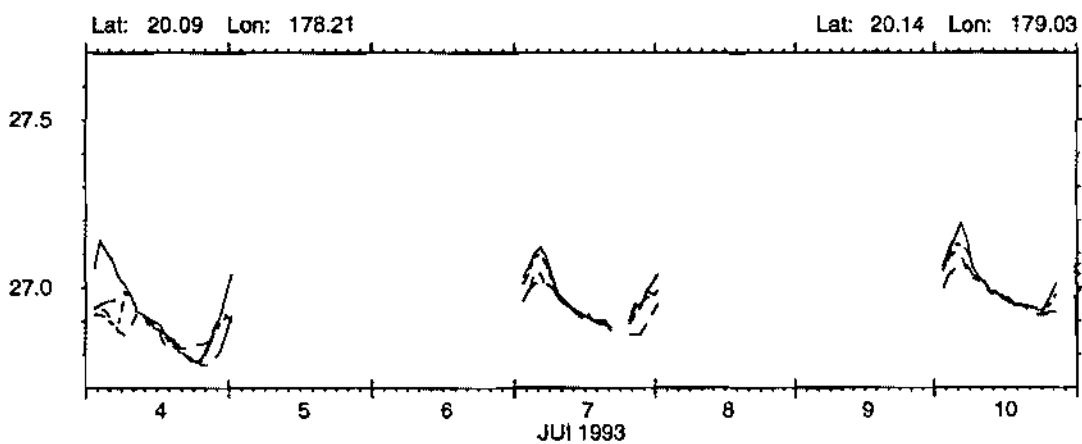
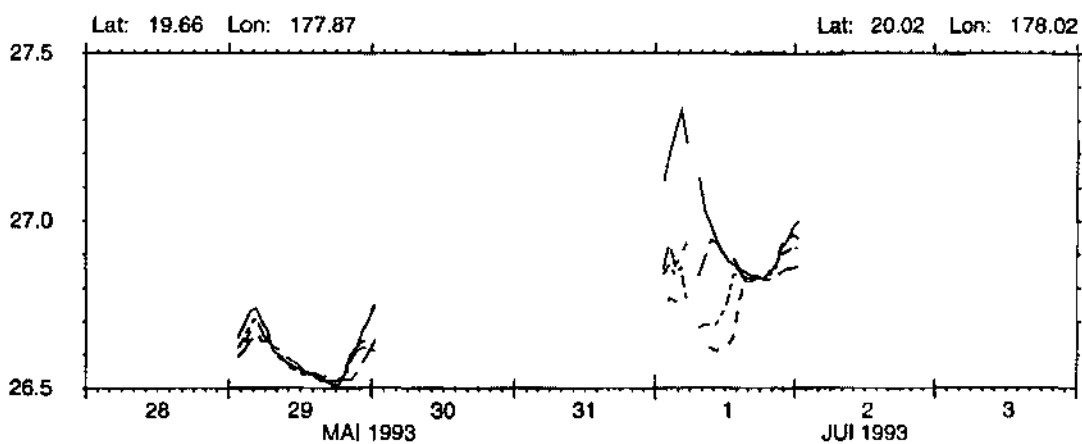
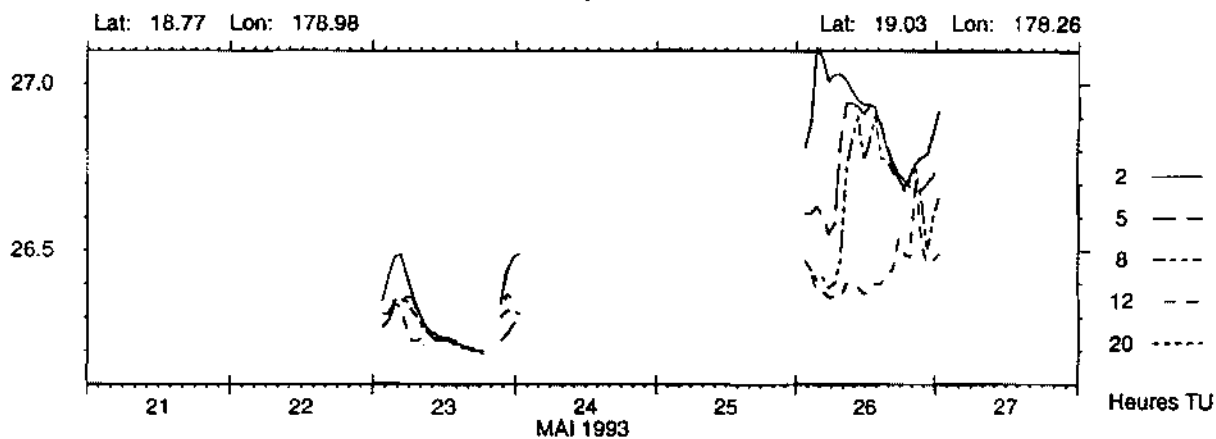
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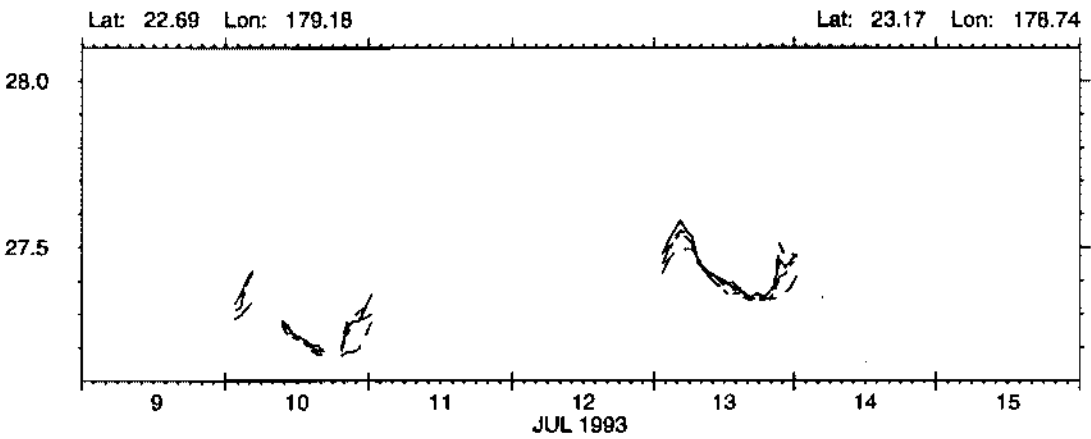
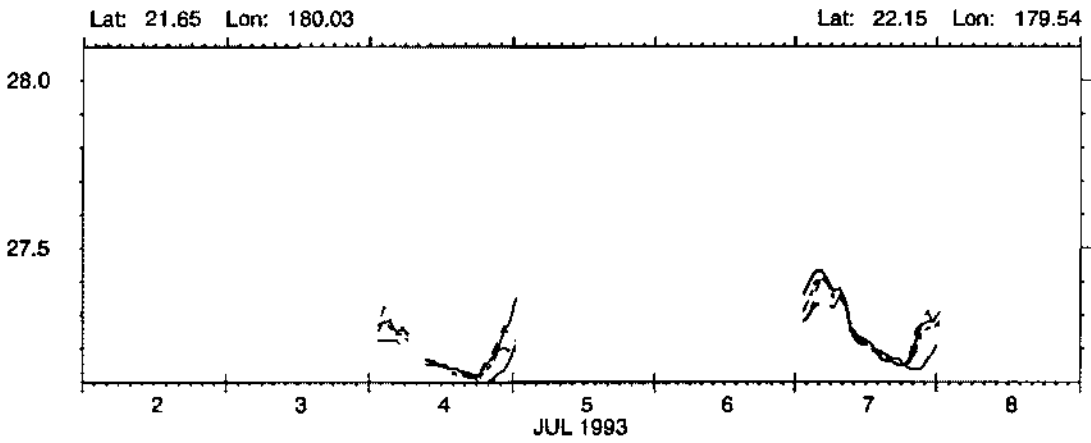
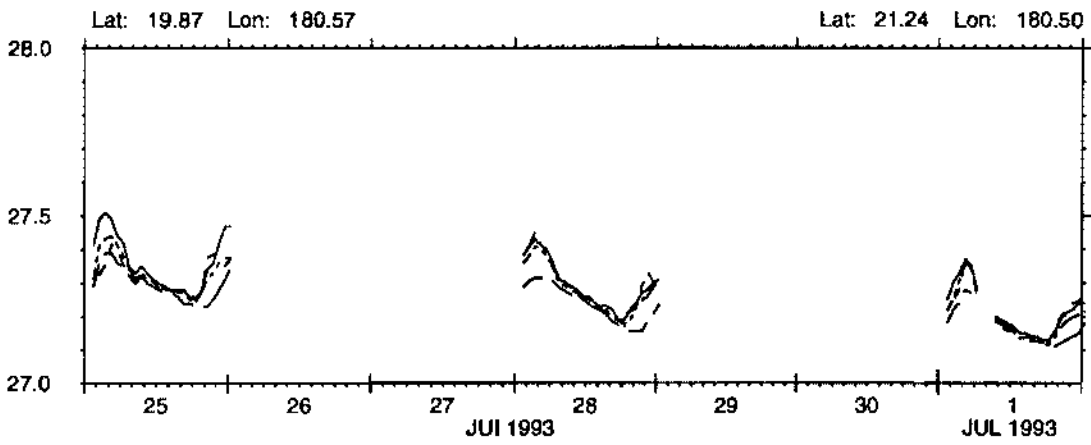
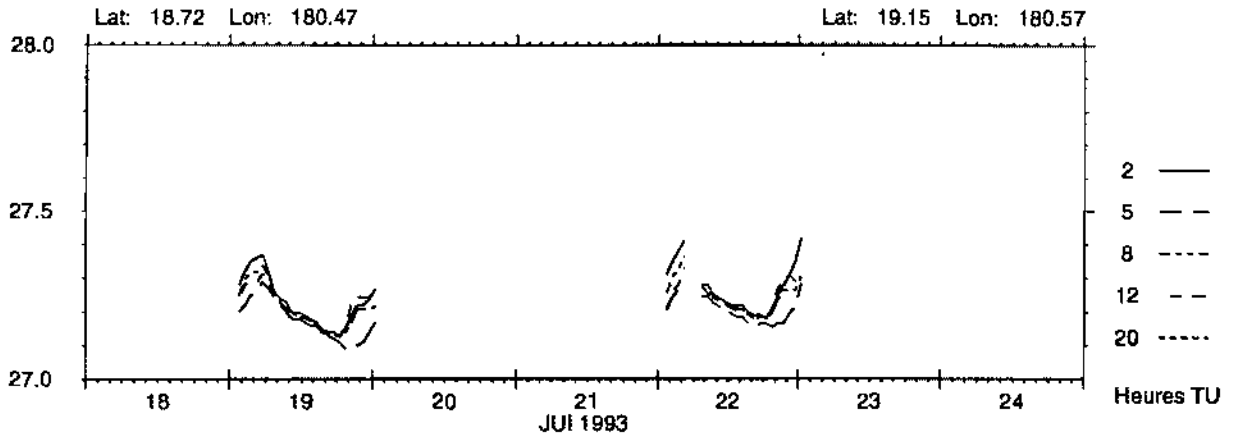
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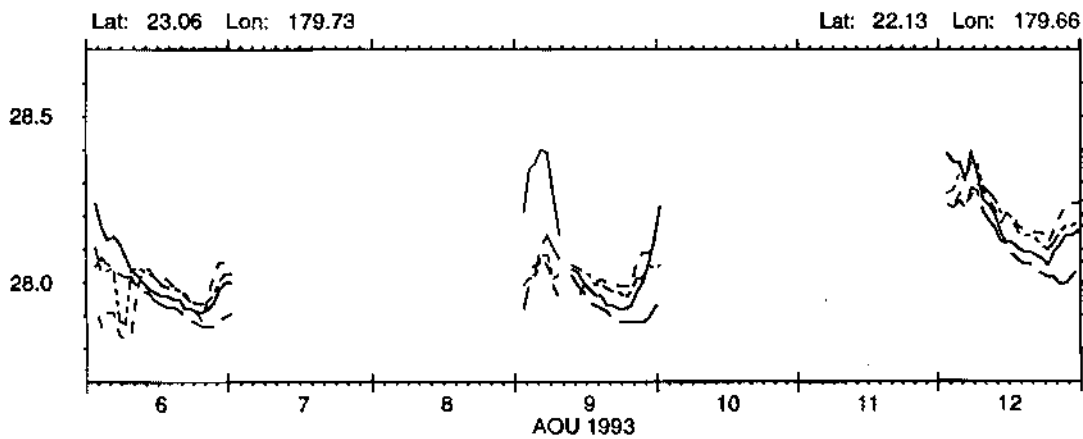
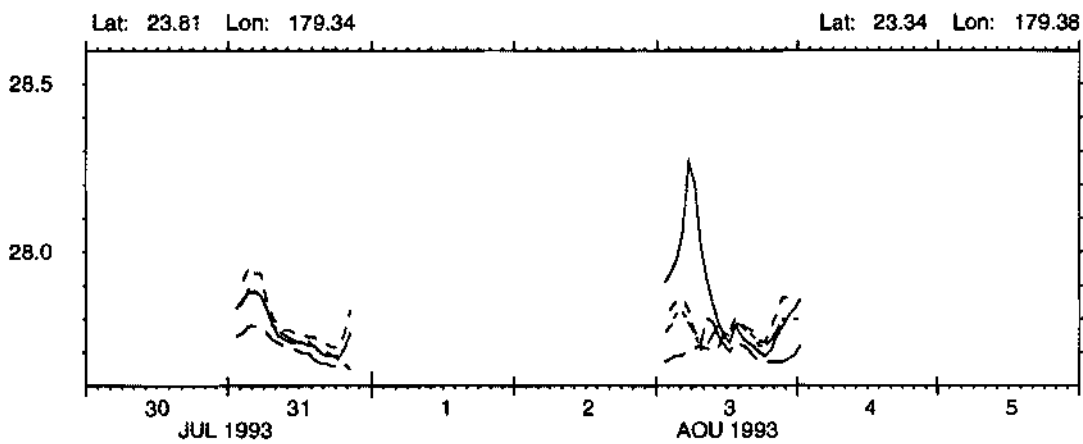
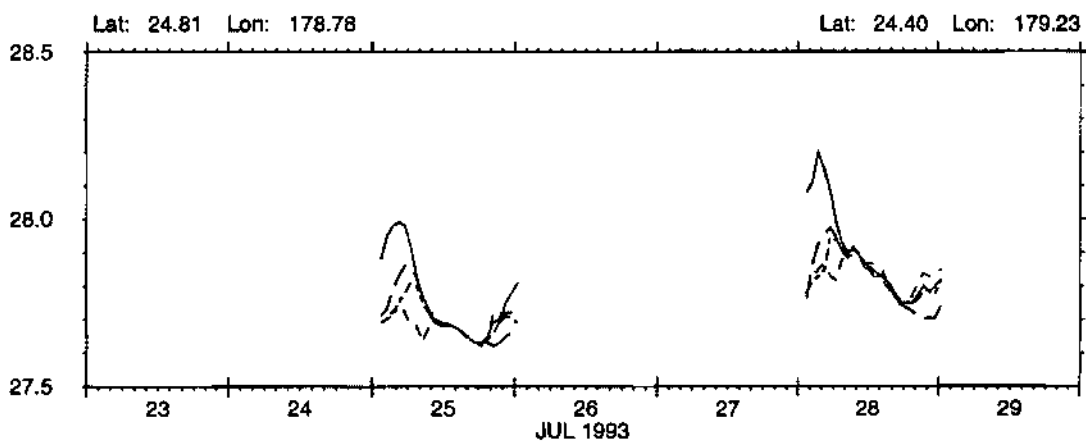
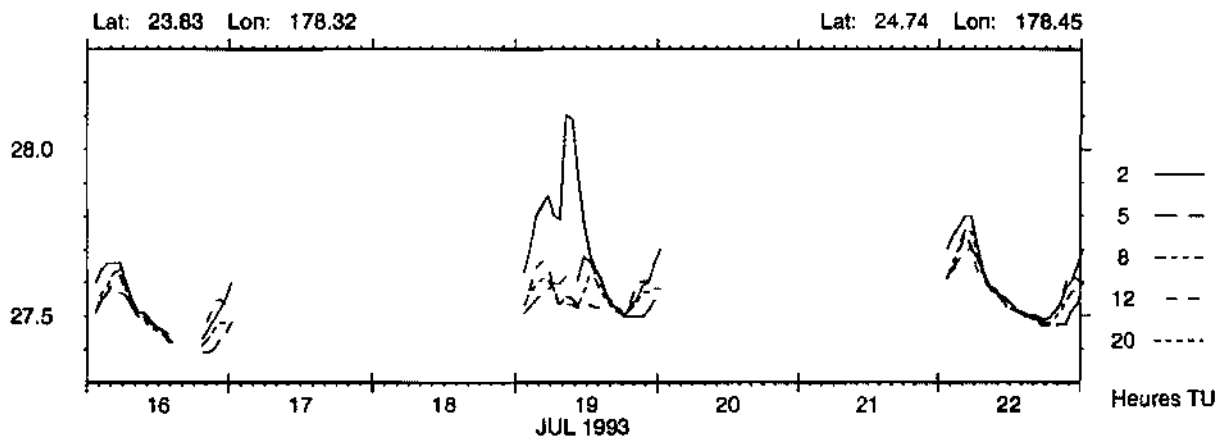
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Bouée dérivante BODEGA 2680

Date début et position: 22/08/92 à 1.02°N, 164.92°E

Launch date and position

Date fin et position : 13/04/93 à 1.10°S, 169.53°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

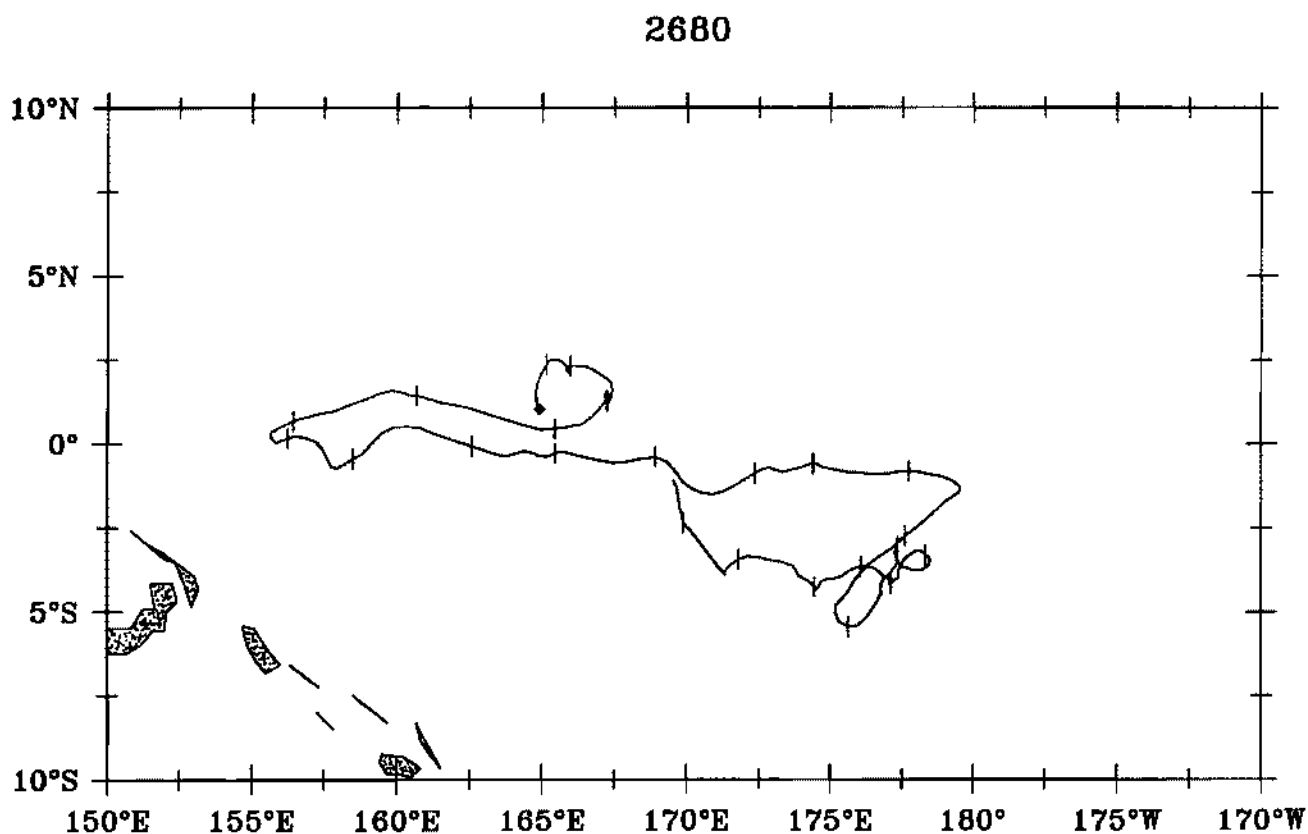
Proposed corrections to compensate sensor drifts

. cycle 19 (15/10/92) : -0.01 capteur 5m

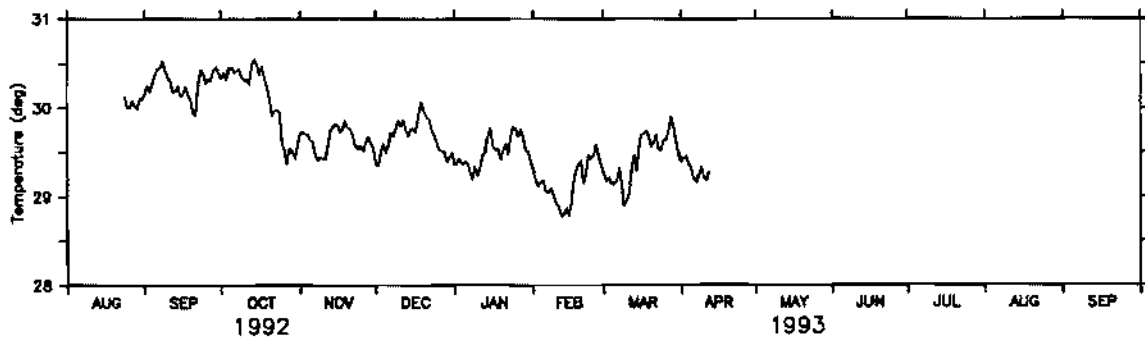
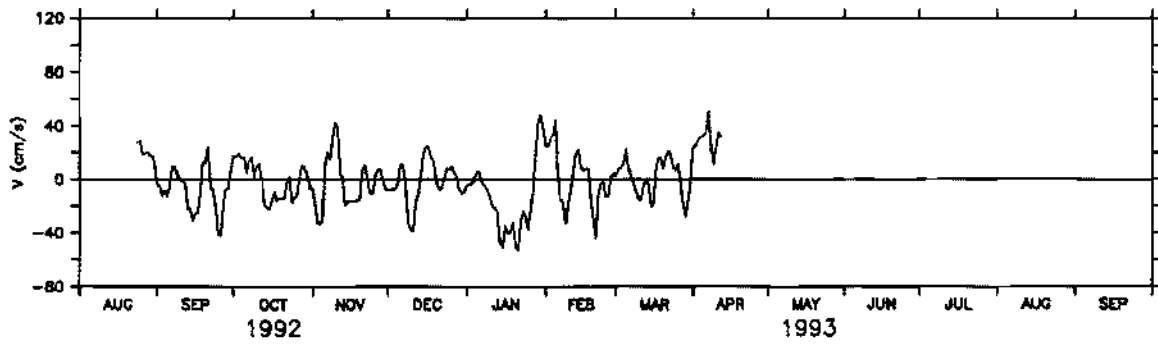
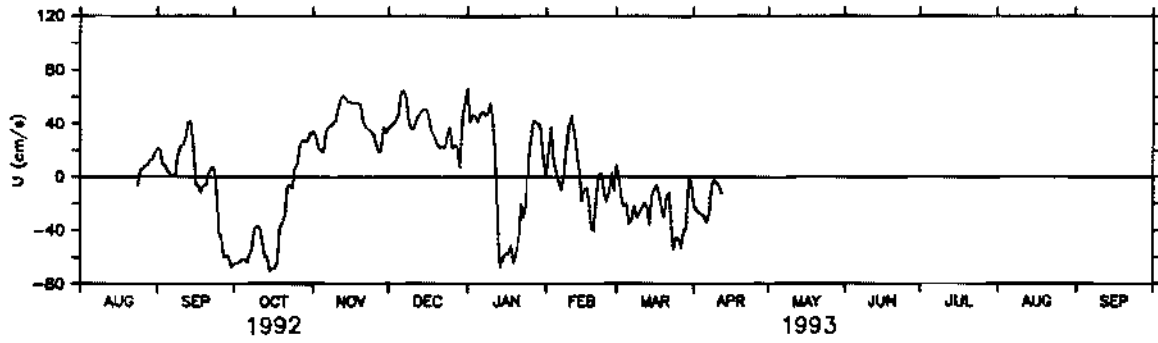
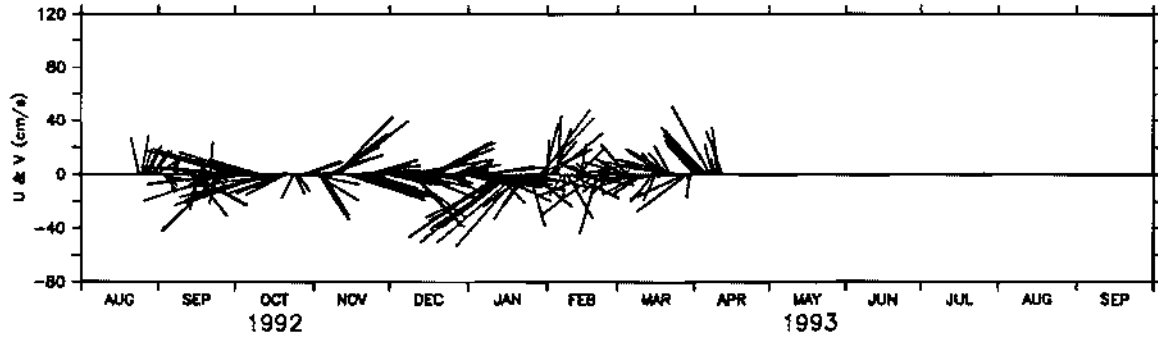
-0.02 capteur 8m

. cycle 50 (16/01/93) : +0.08 capteur 2m

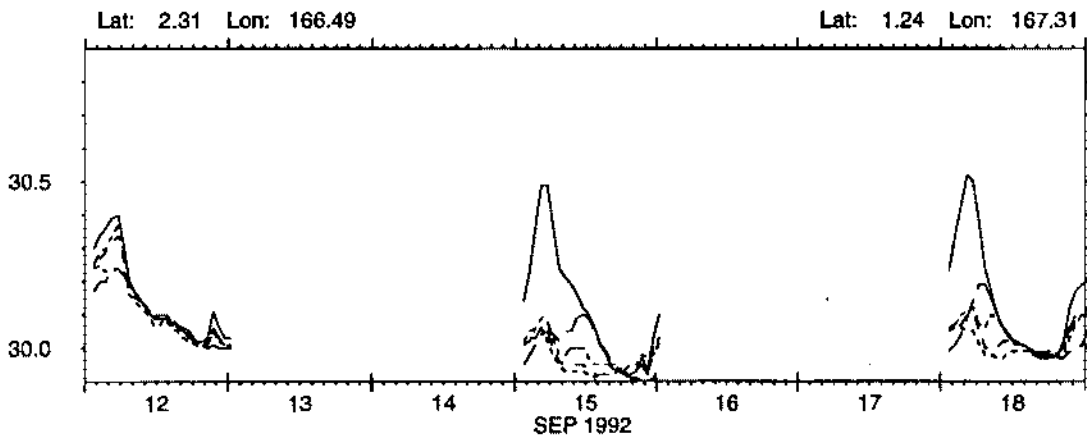
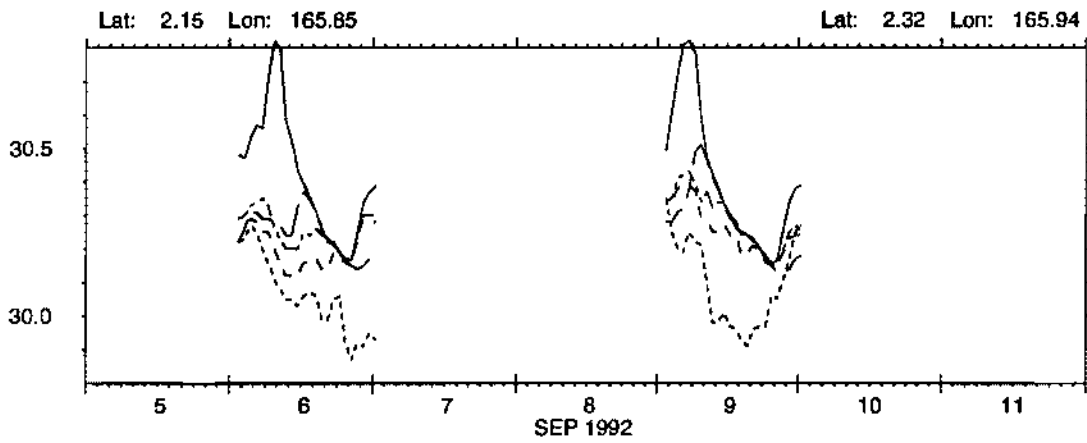
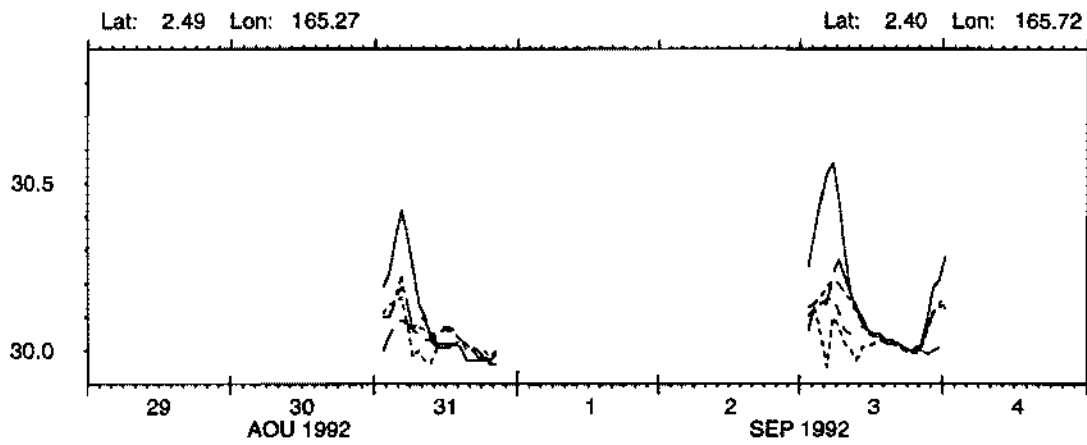
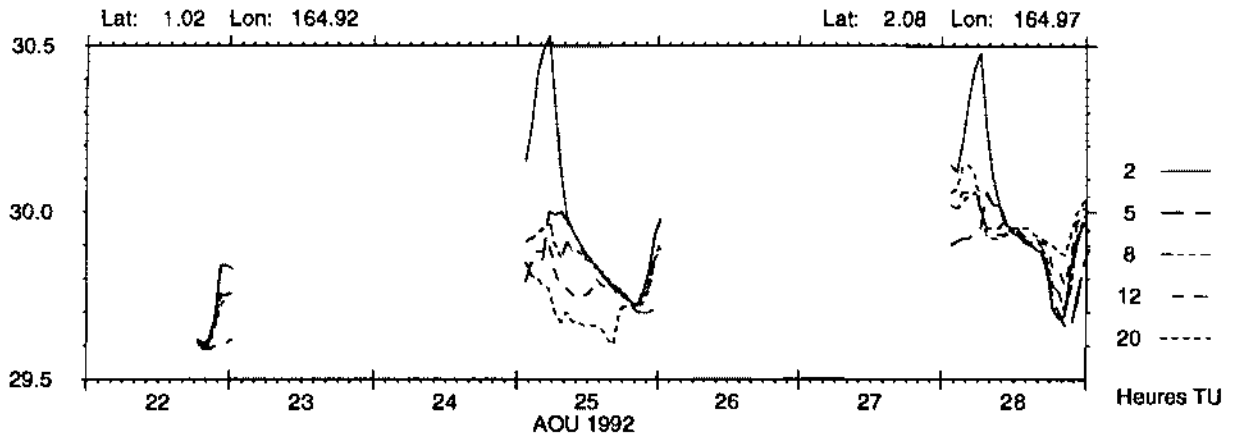
Fortes amplitudes du capteur 5m, par temps calme, à partir de janvier 1993.



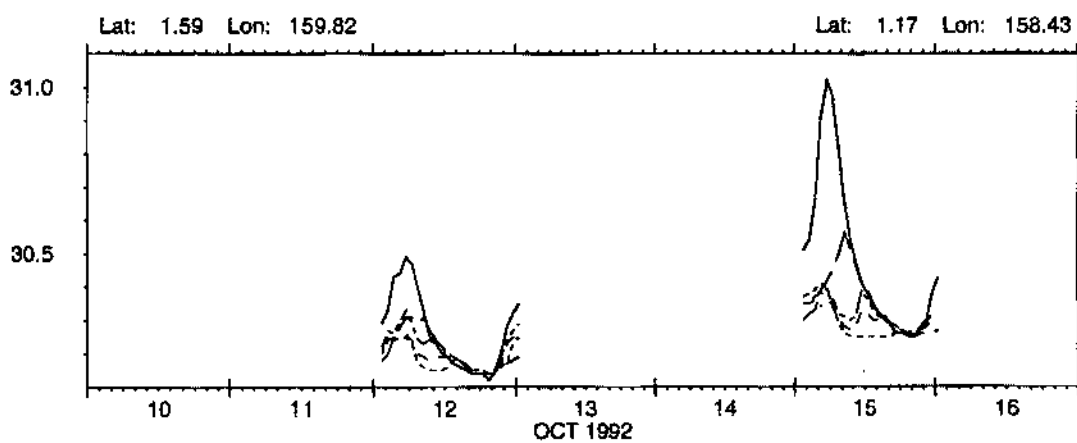
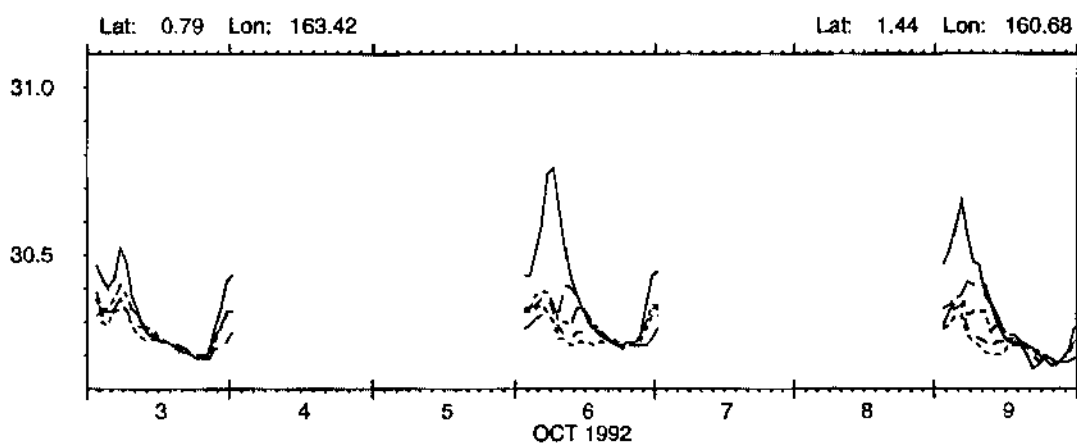
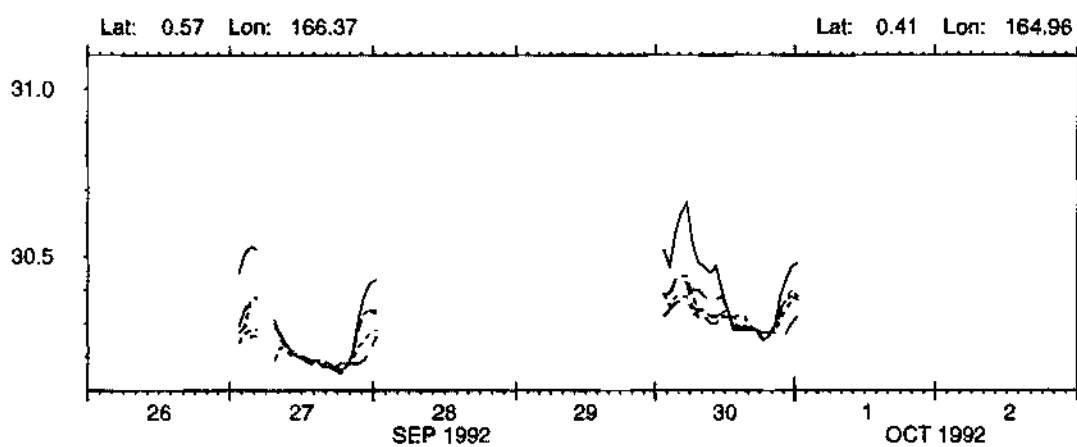
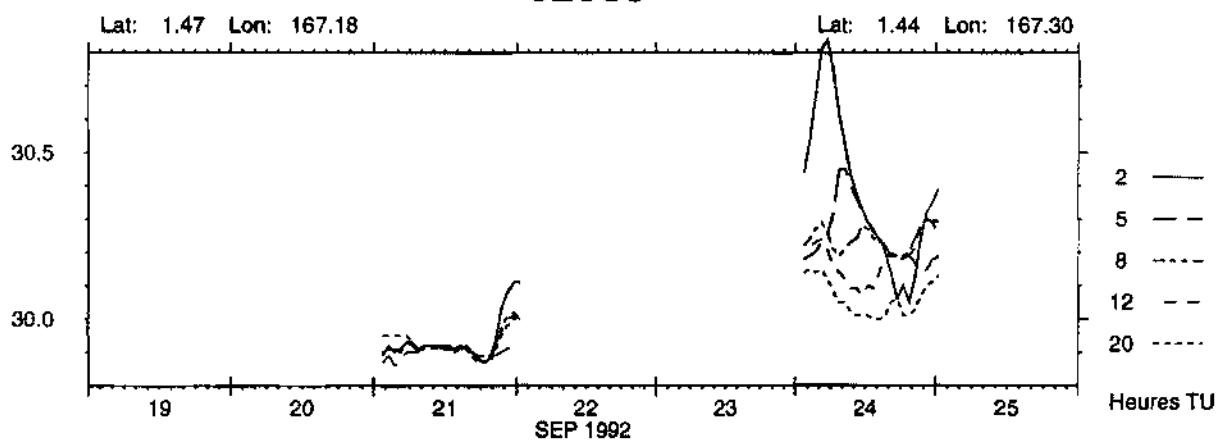
N°2680



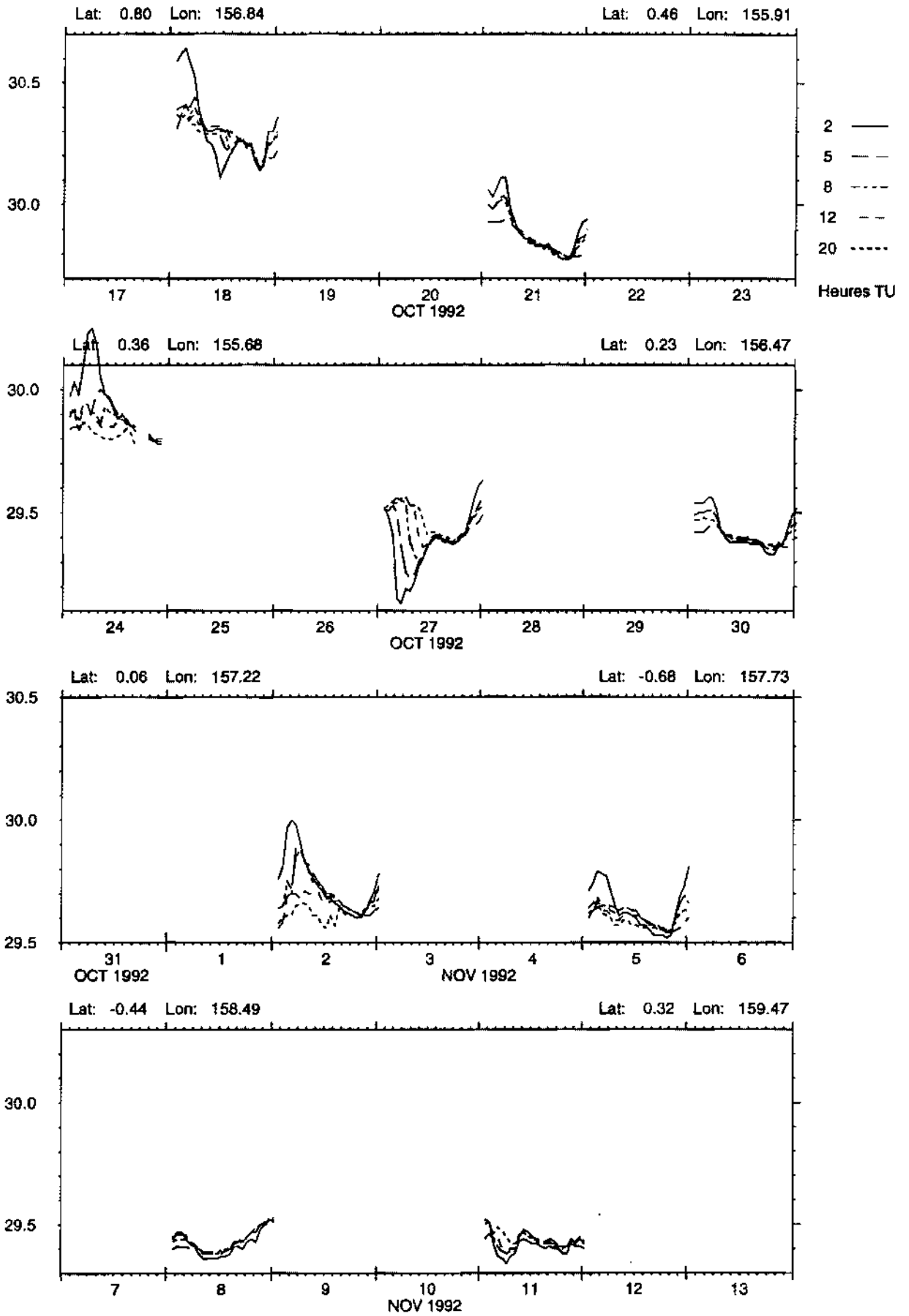
02680



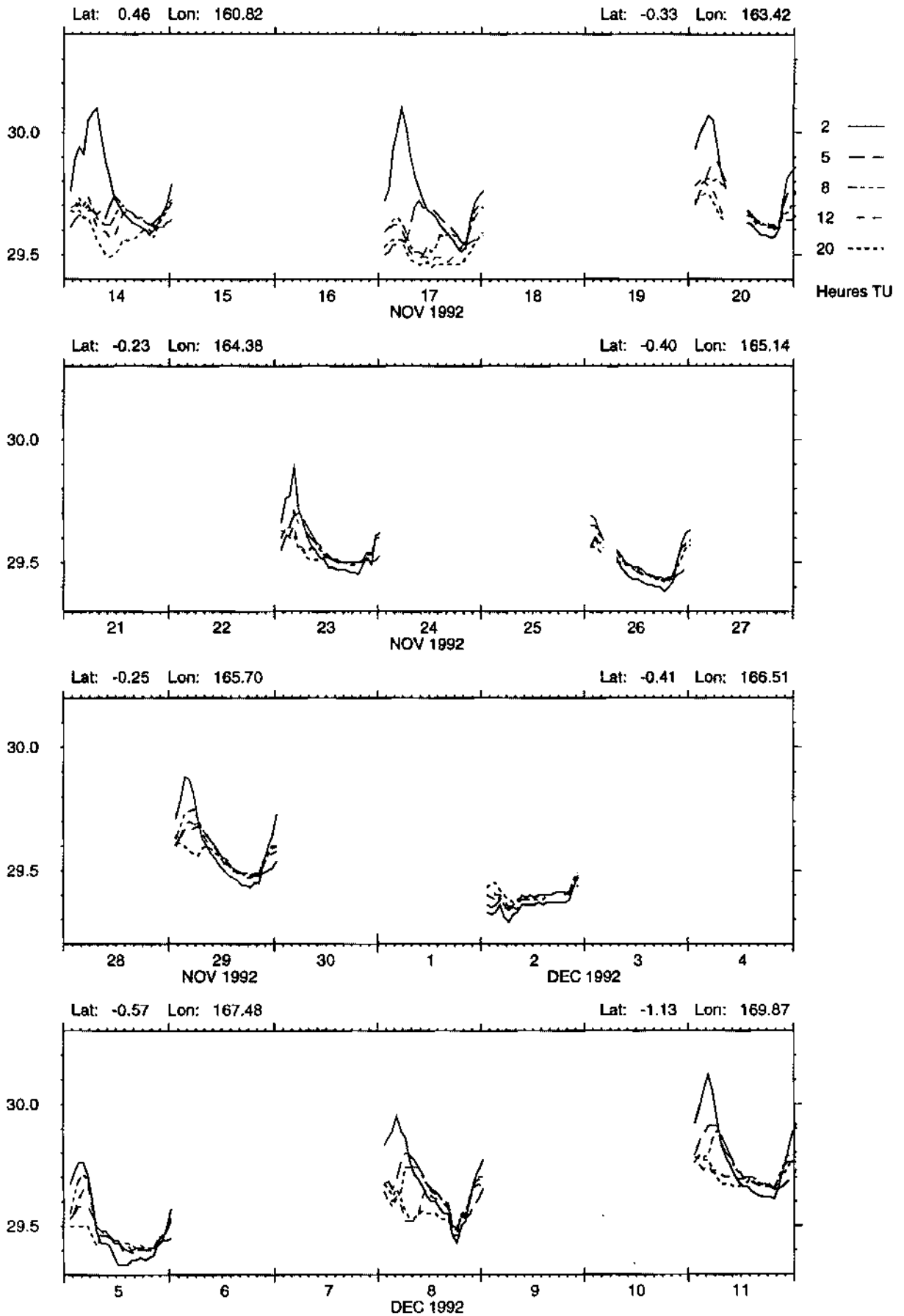
02680



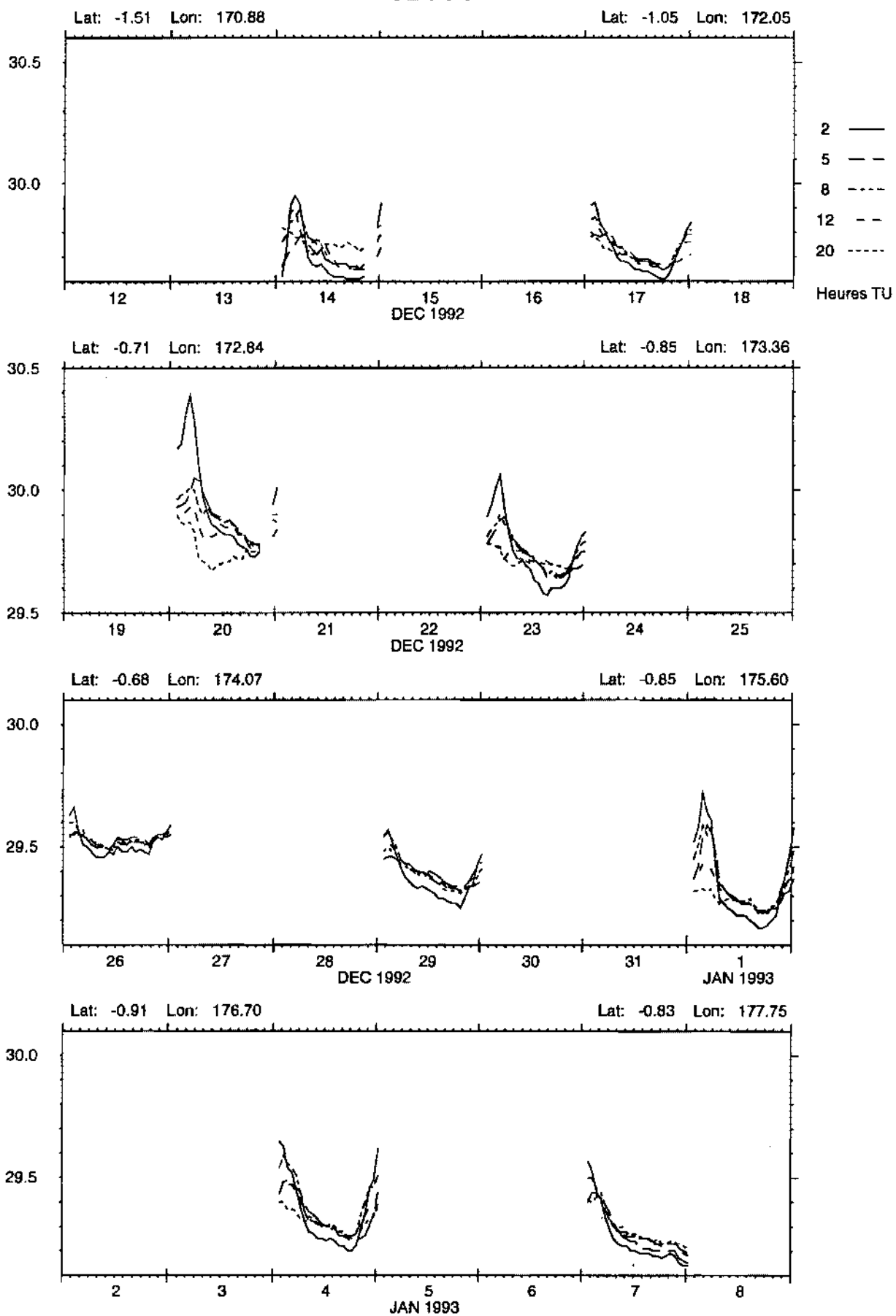
02680



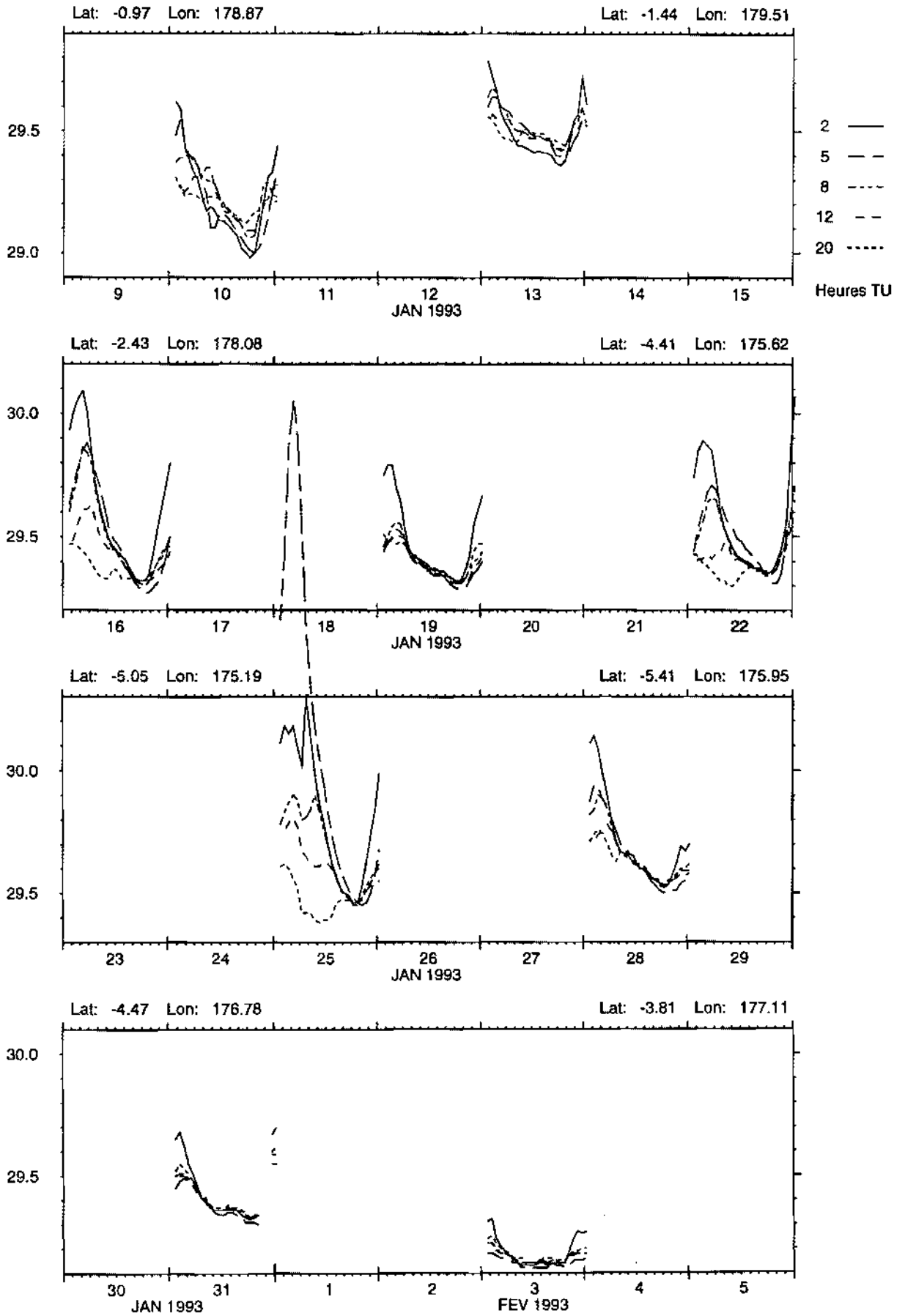
02680



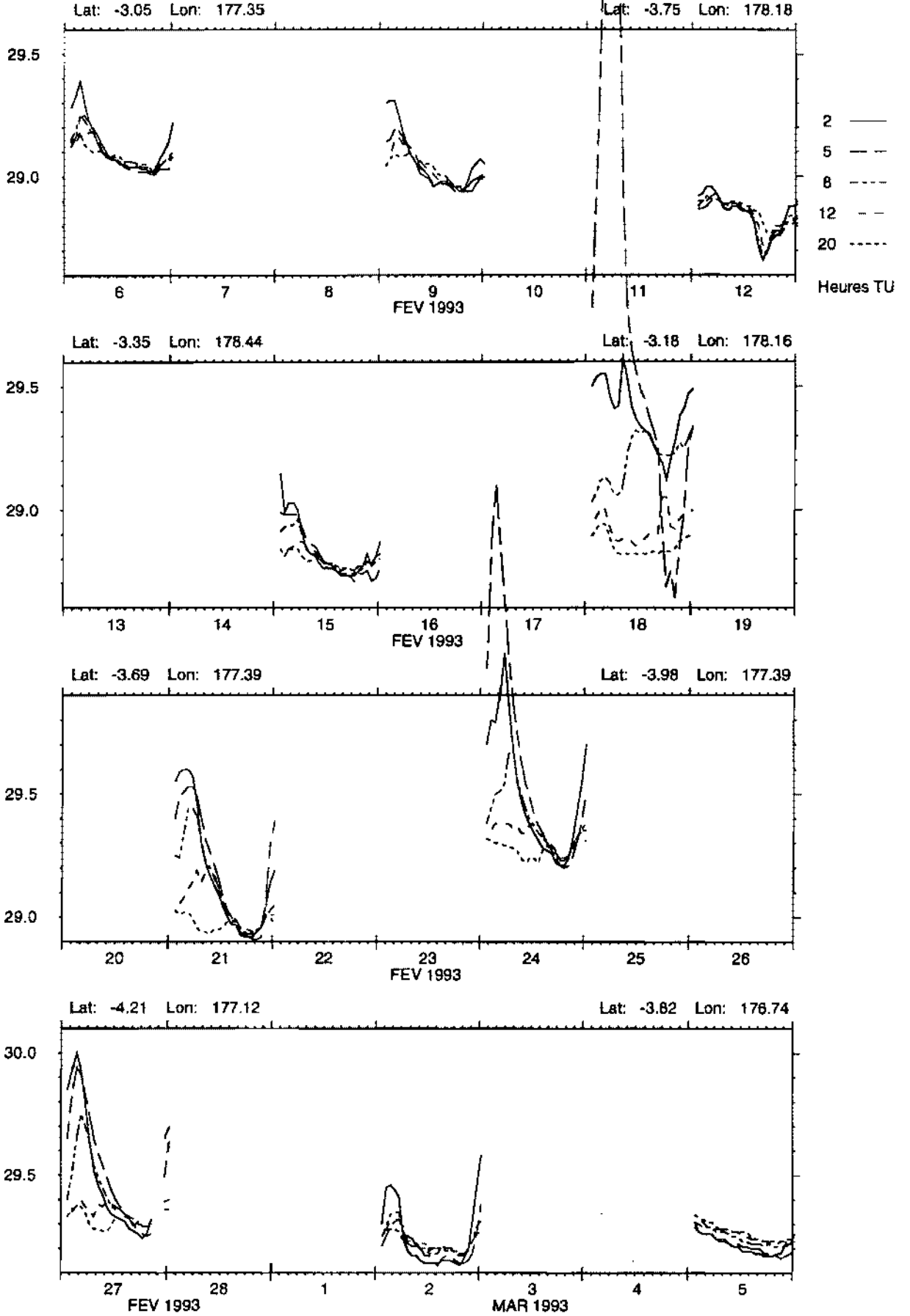
02680



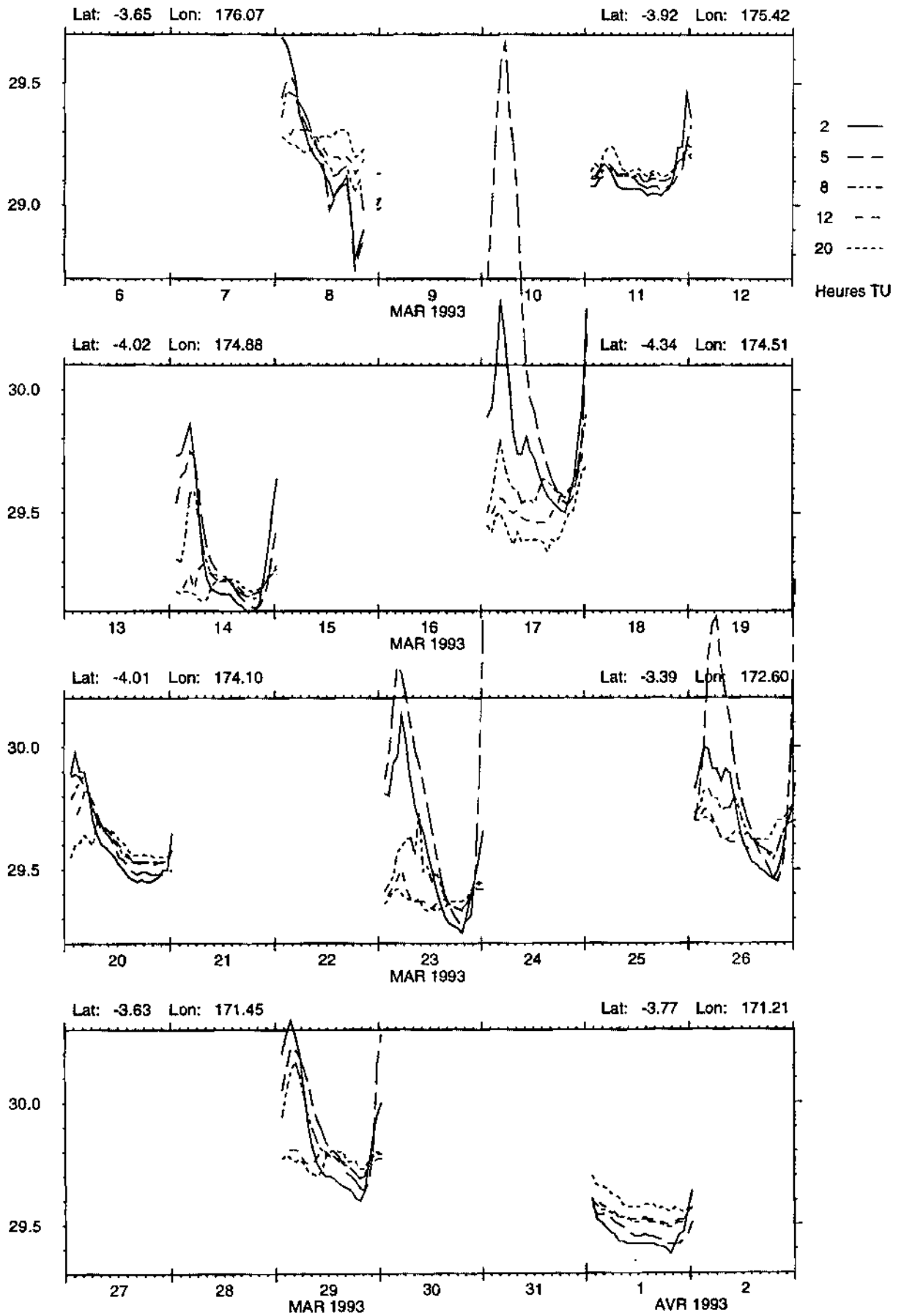
02680



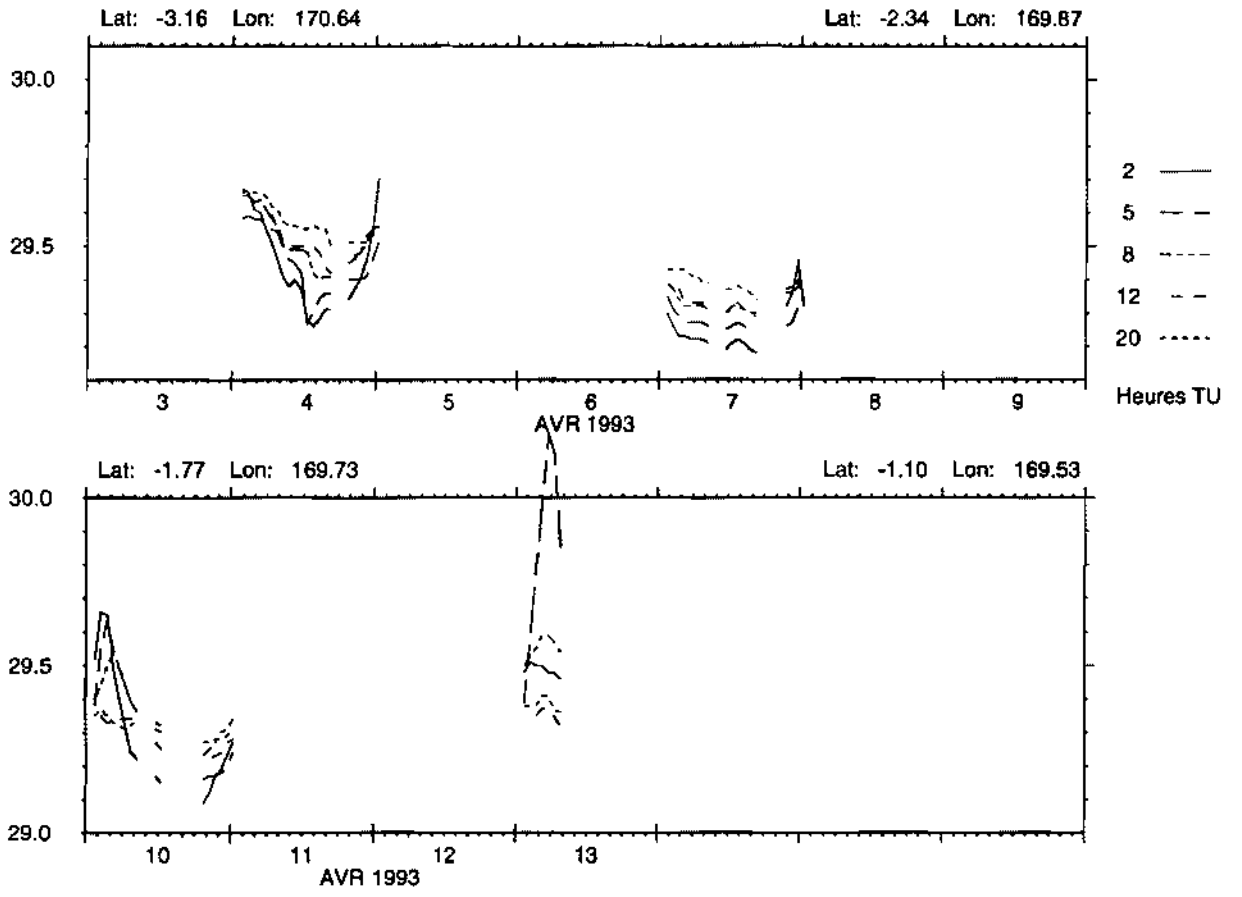
02680

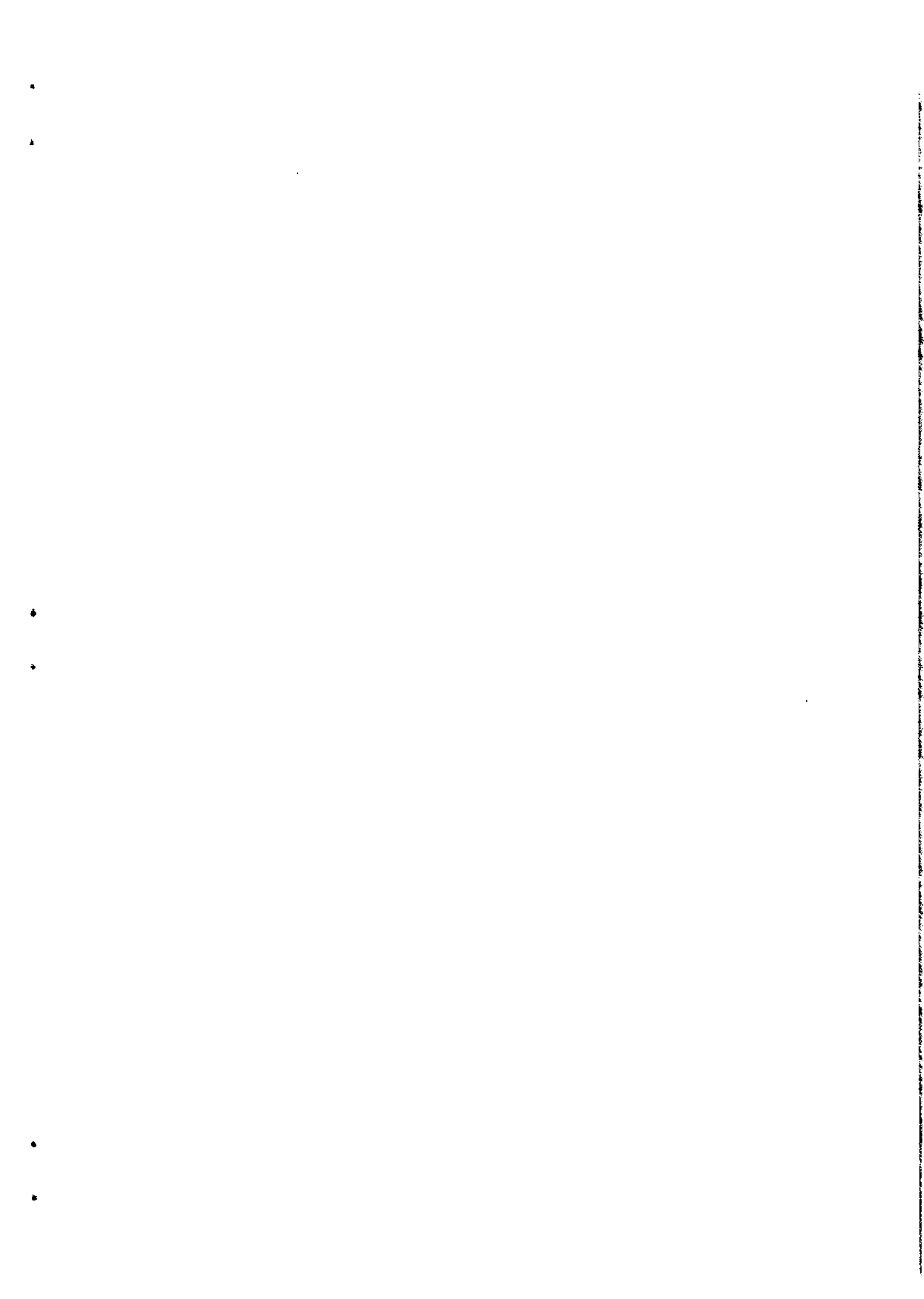


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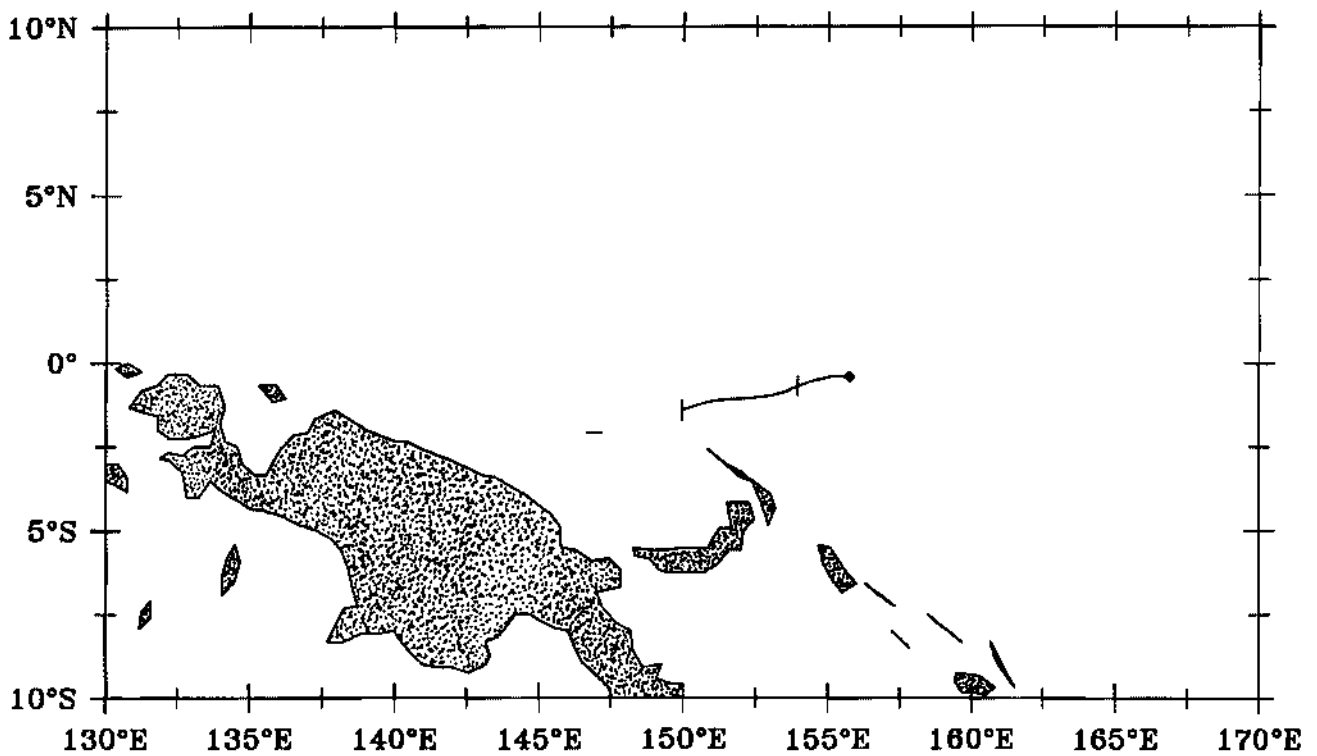




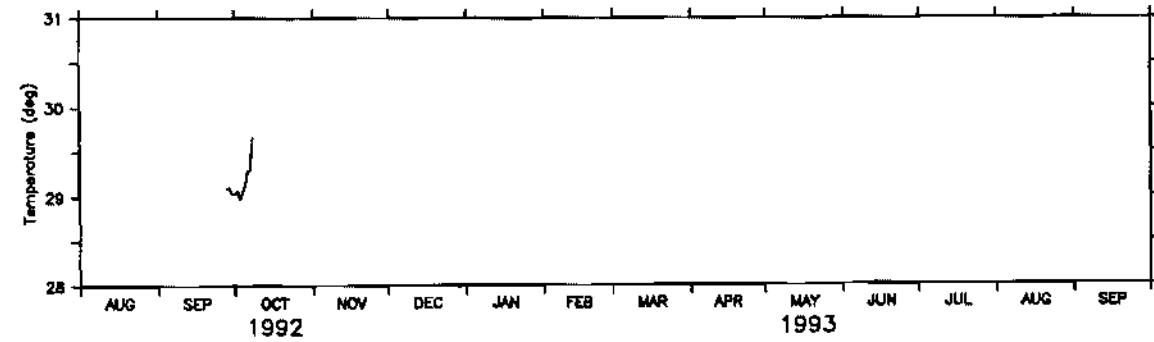
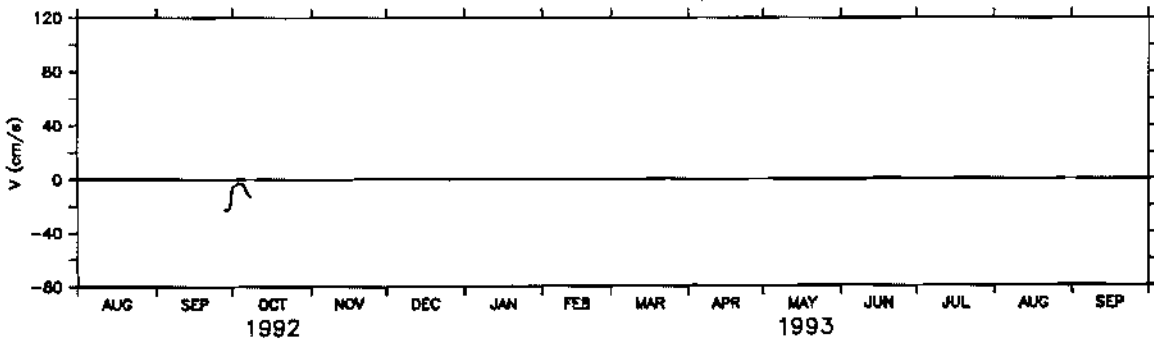
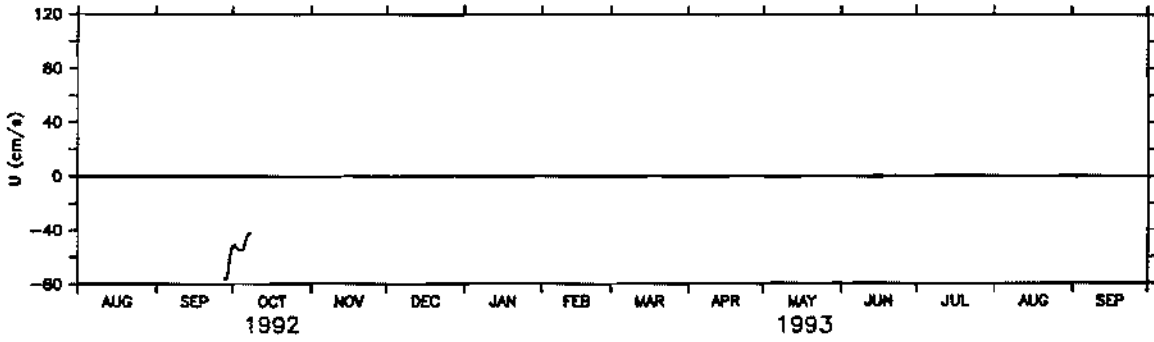
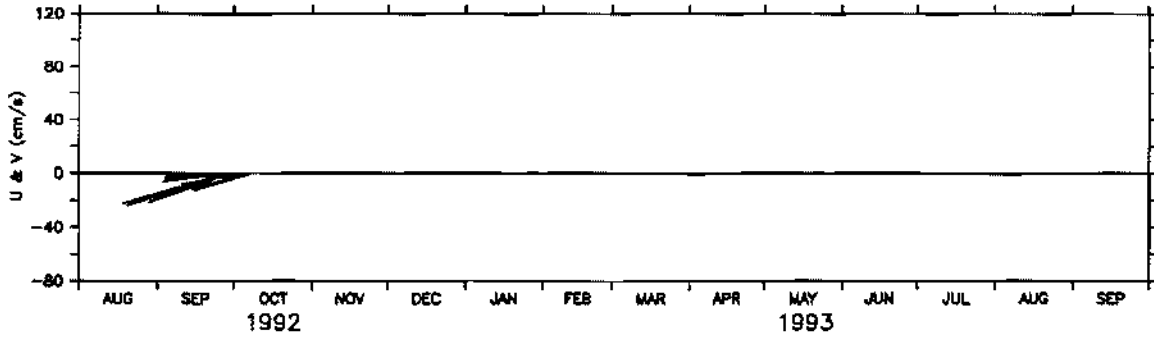
Bouée dérivante BODEGA n°2681

Date début et position : 26/09/92 à 0.43°S, 155.75°E
Launch date and position
Date fin et position : 09/10/92 à 1.42°S, 149.94°E
End date and position

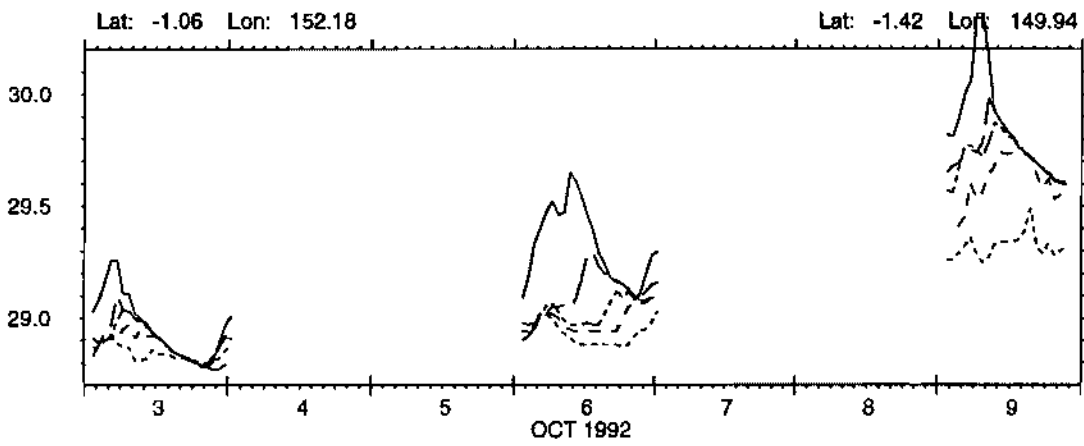
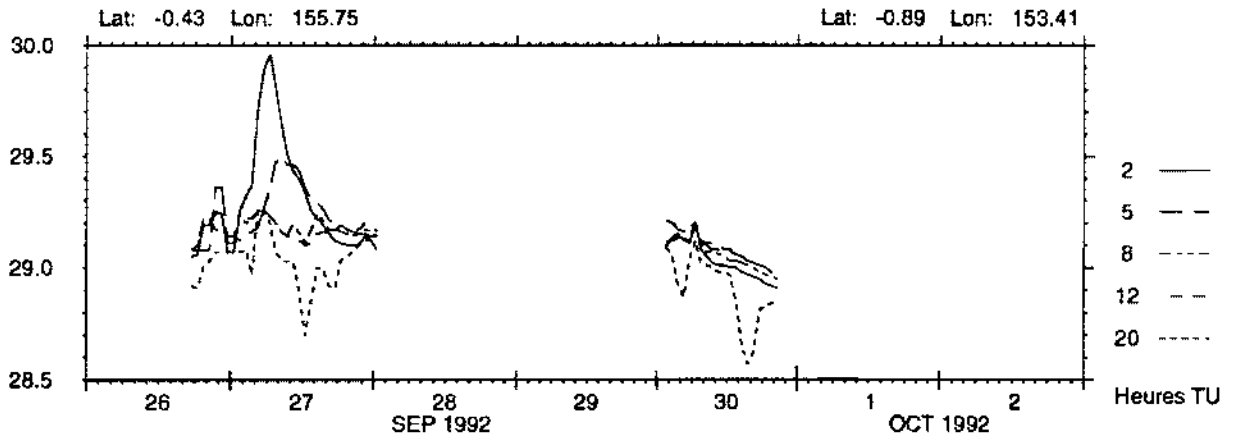
2681

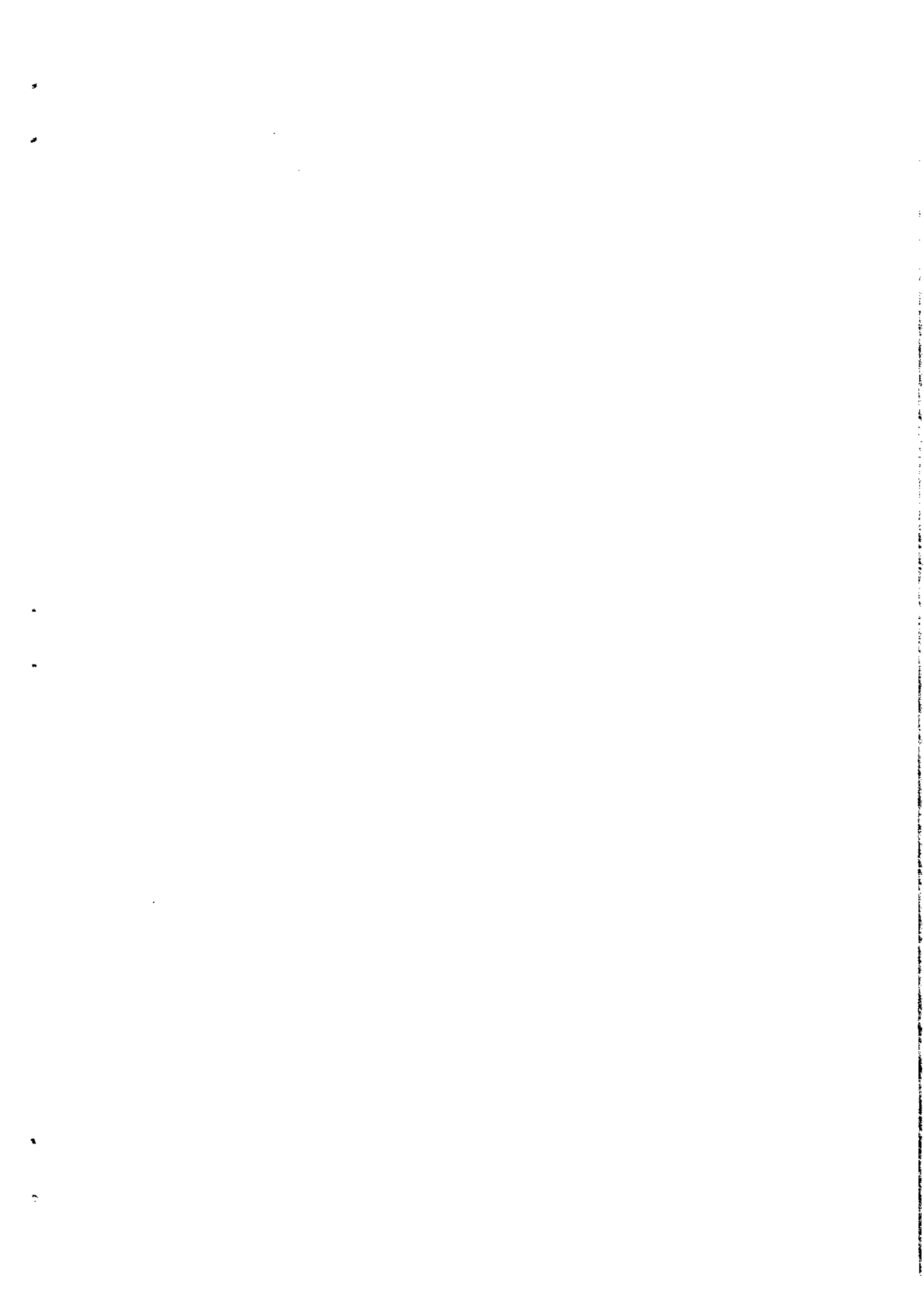


N°2681



02681

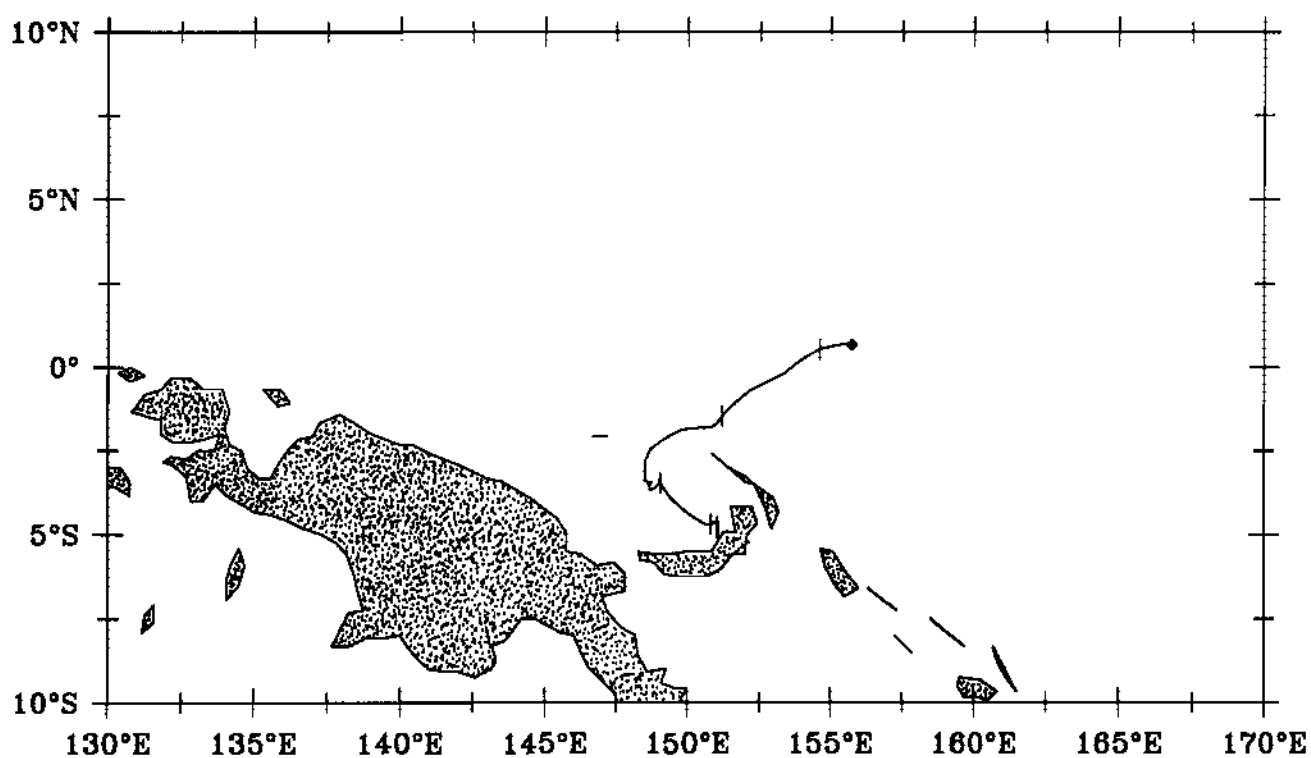




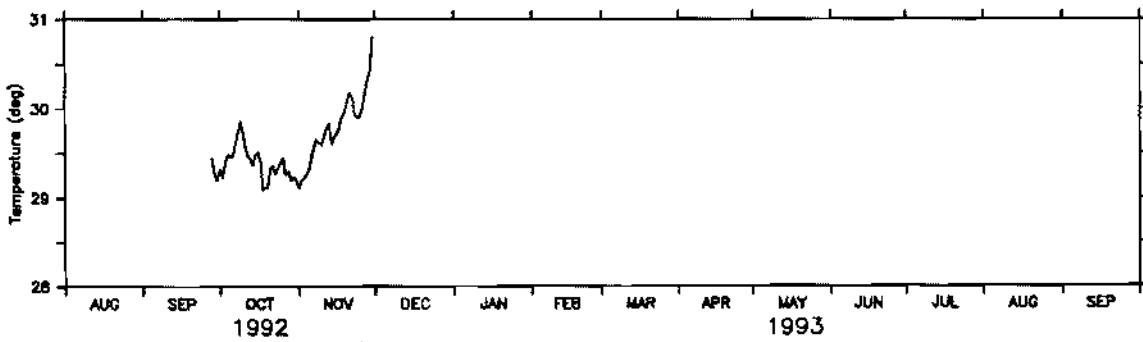
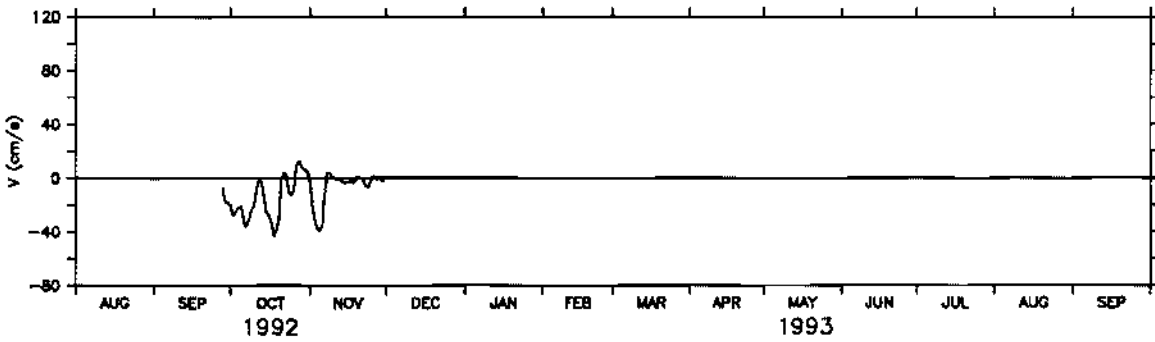
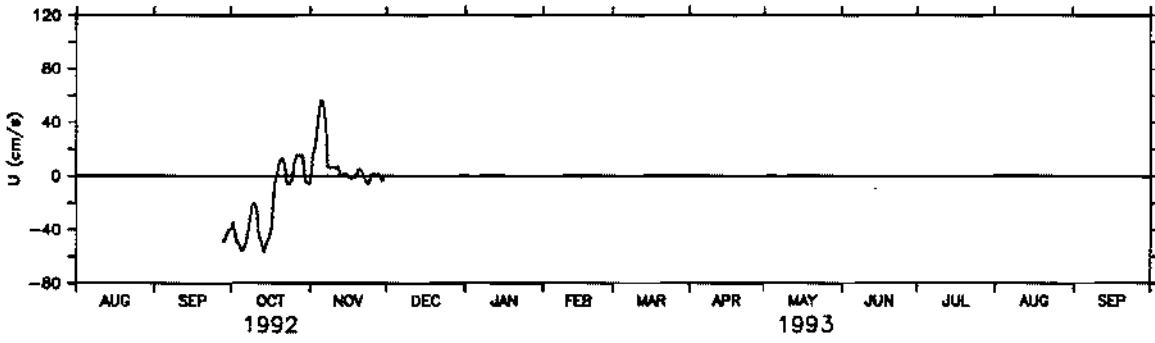
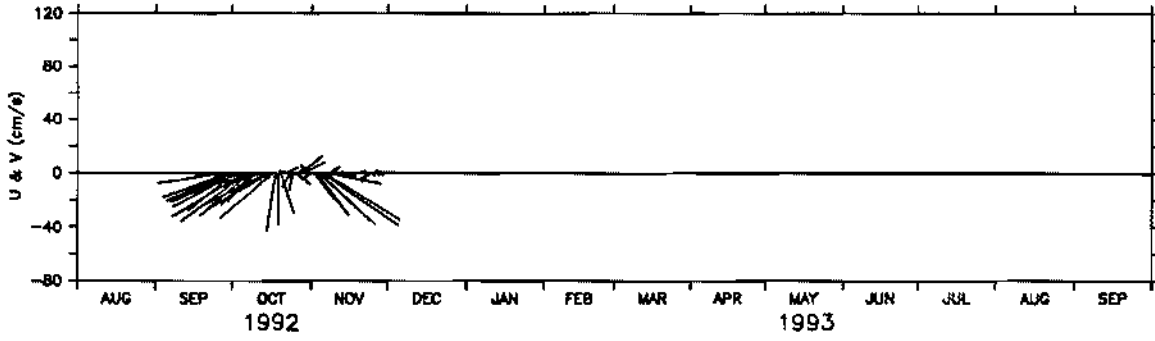
Bouée dérivante BODEGA n°2682

Date début et position : 26/09/92 à 0.67°N, 155.74°E
Launch date and position
Date fin et position : 01/12/92 à 4.91°S, 151.02°E
End date and position

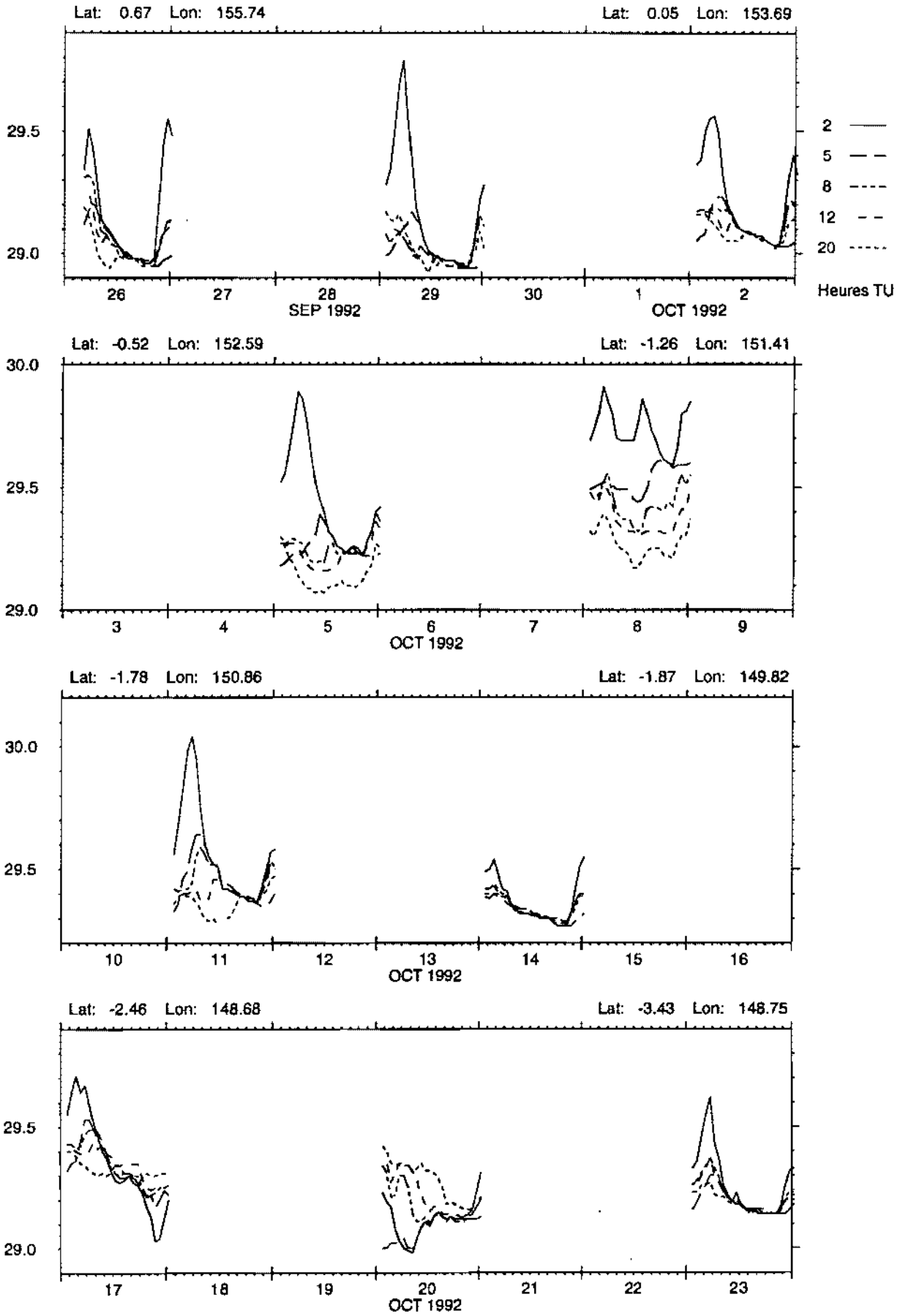
2682



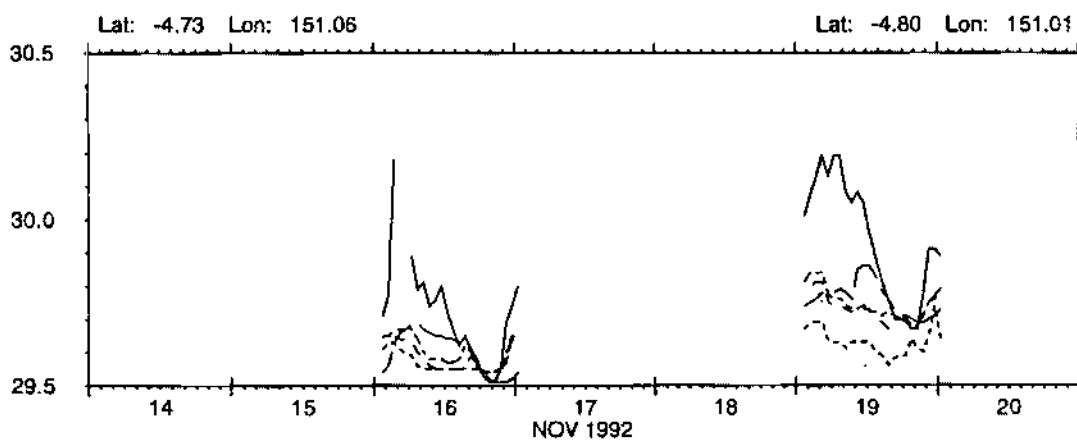
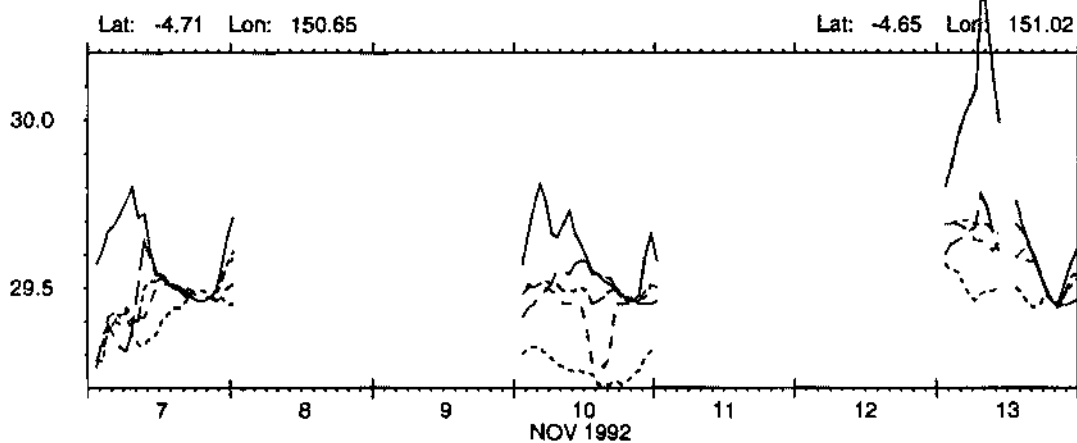
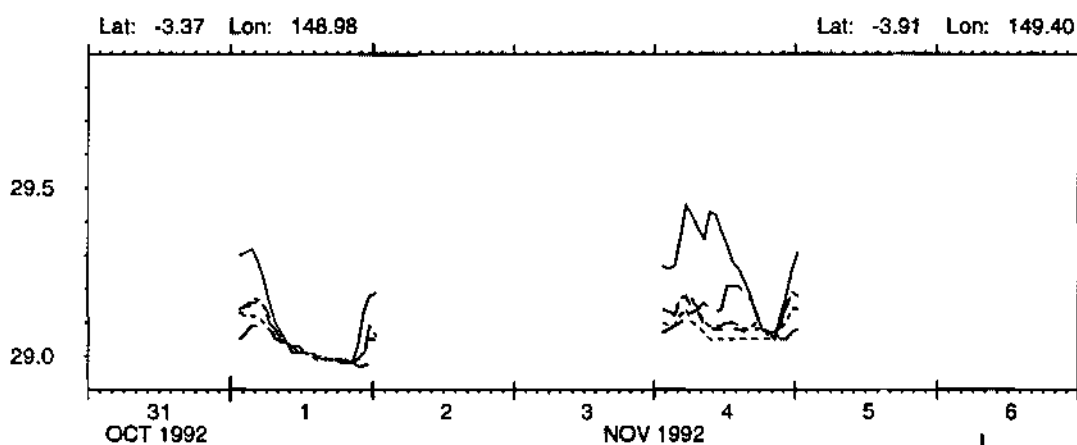
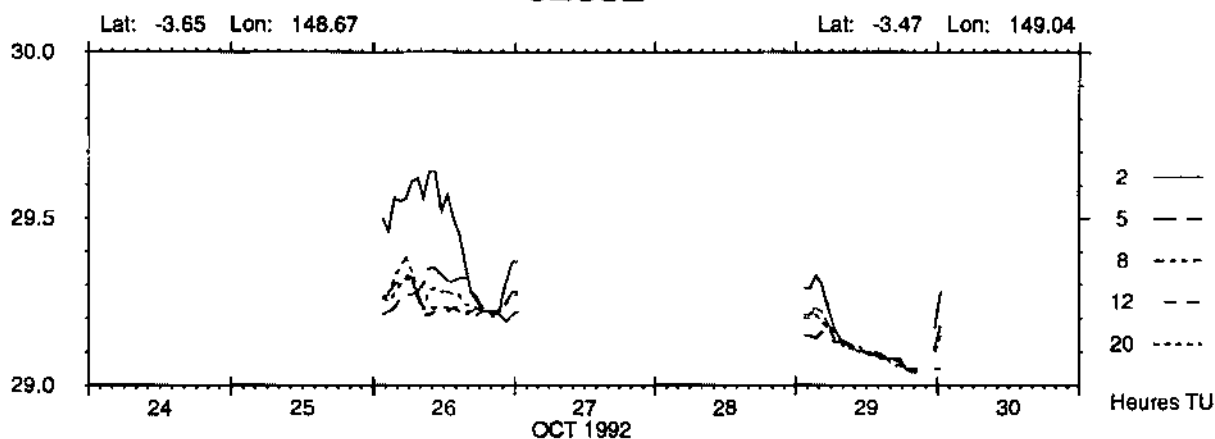
N°2682



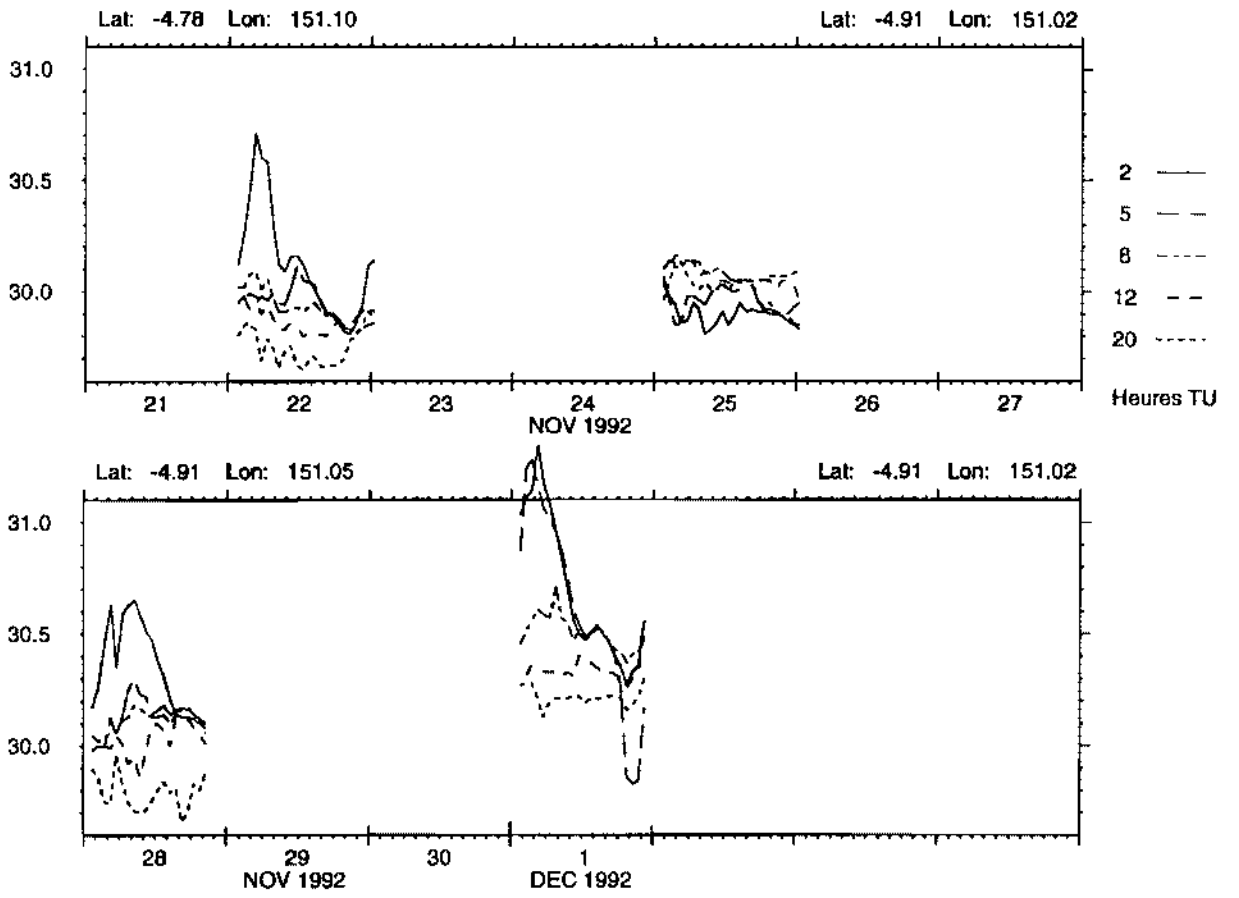
02682

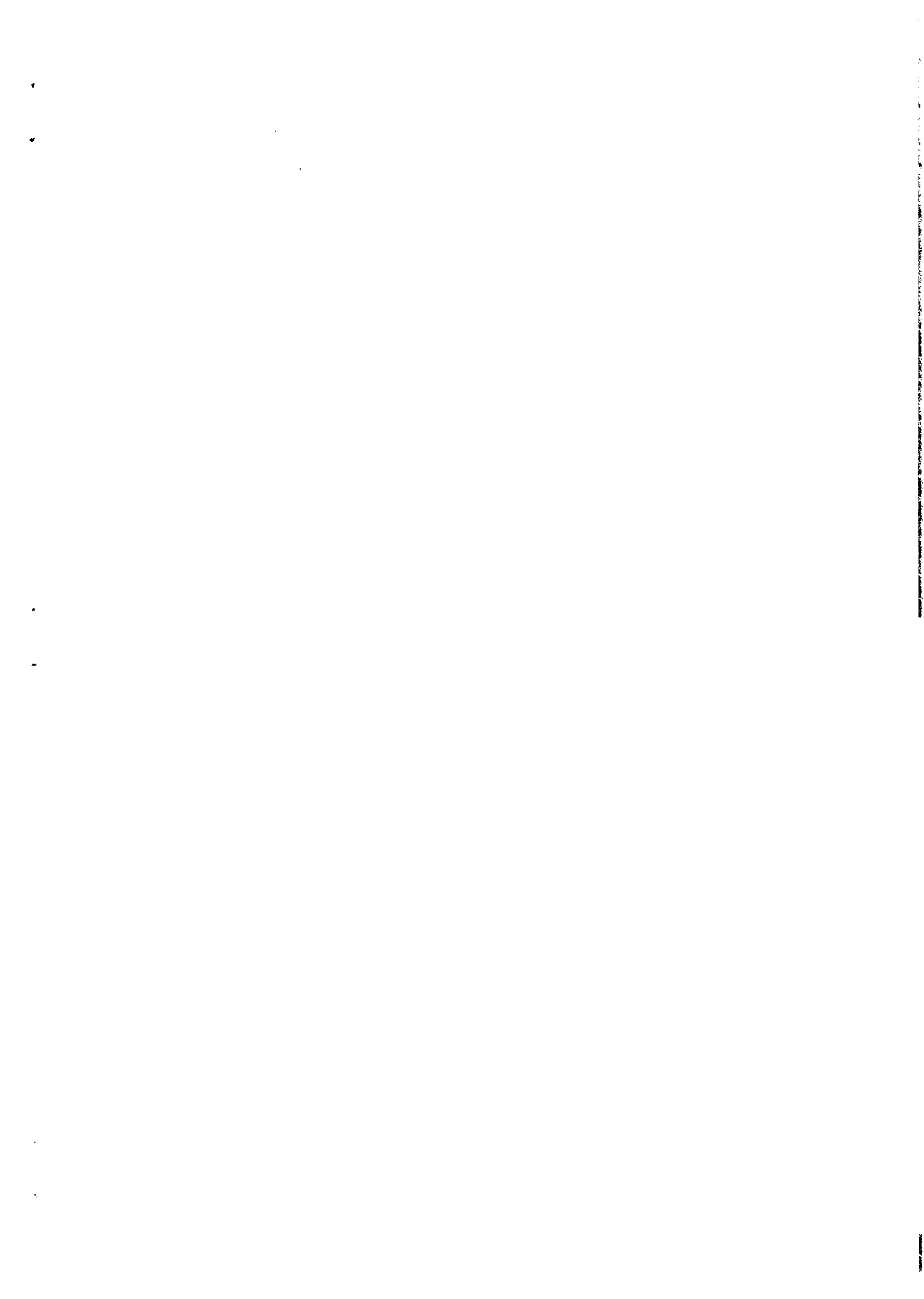


02682



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Bouée dérivante BODEGA n° 2683

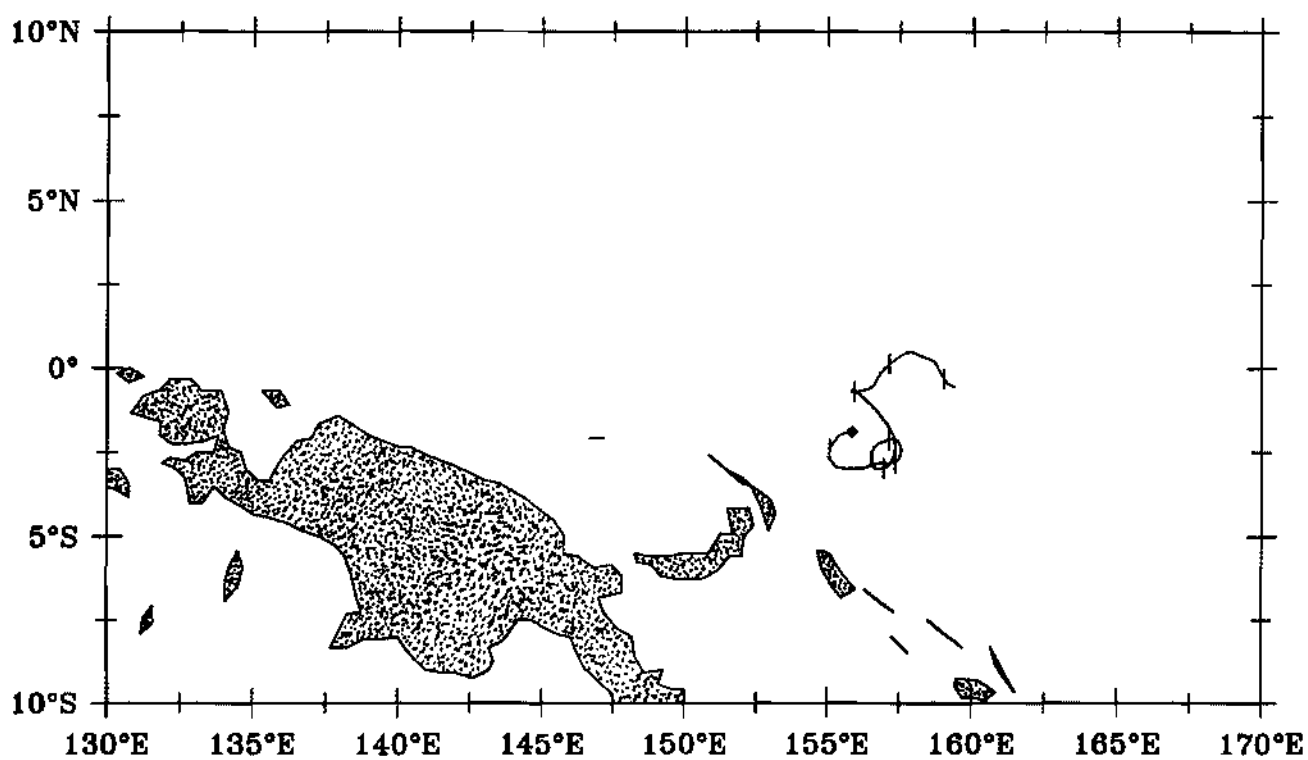
Date début et position : 22/01/93 à 1.88°S, 155.87°E

Launch date and position

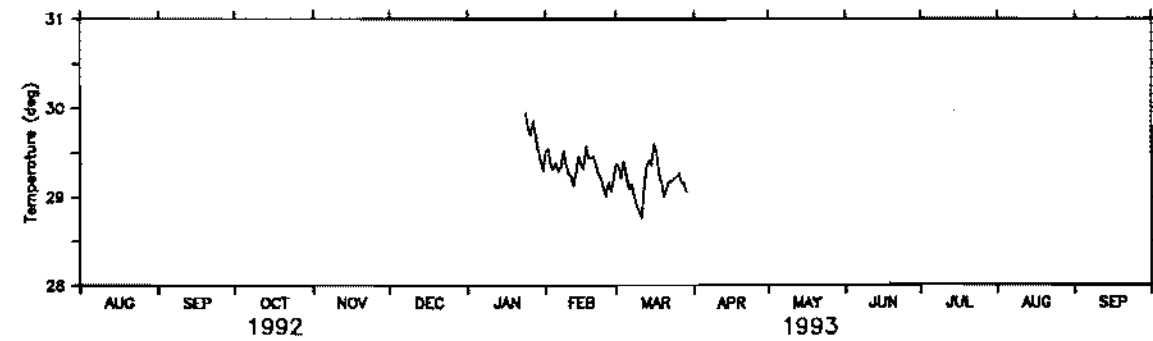
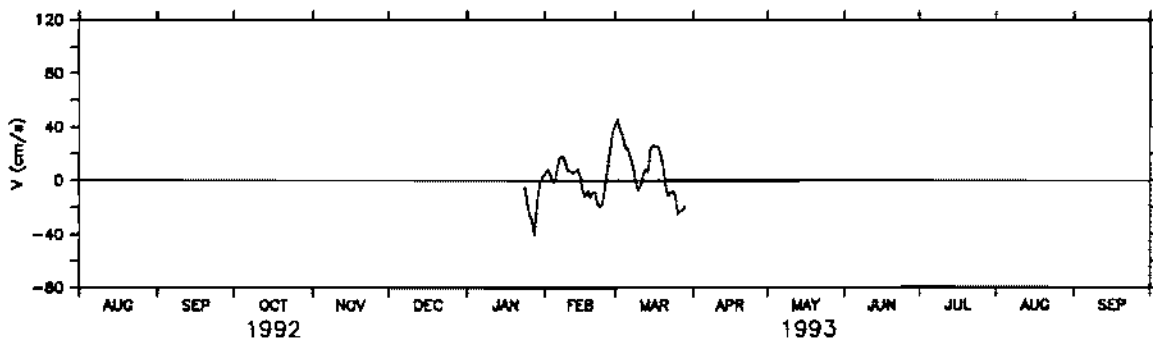
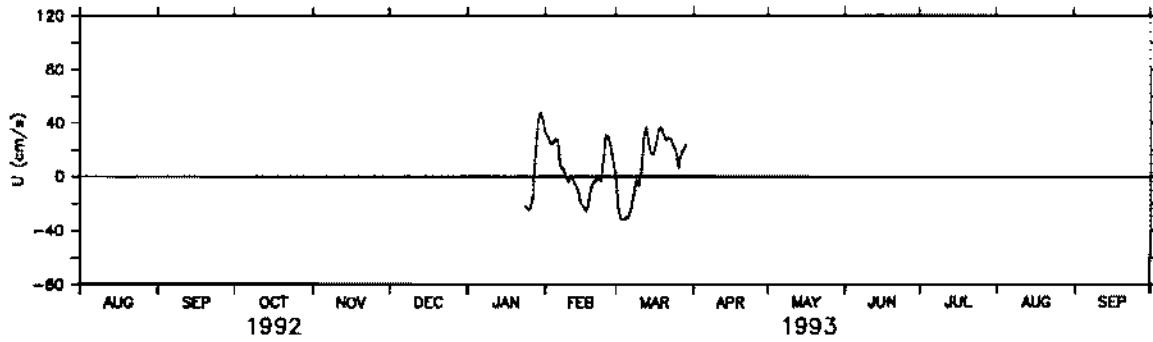
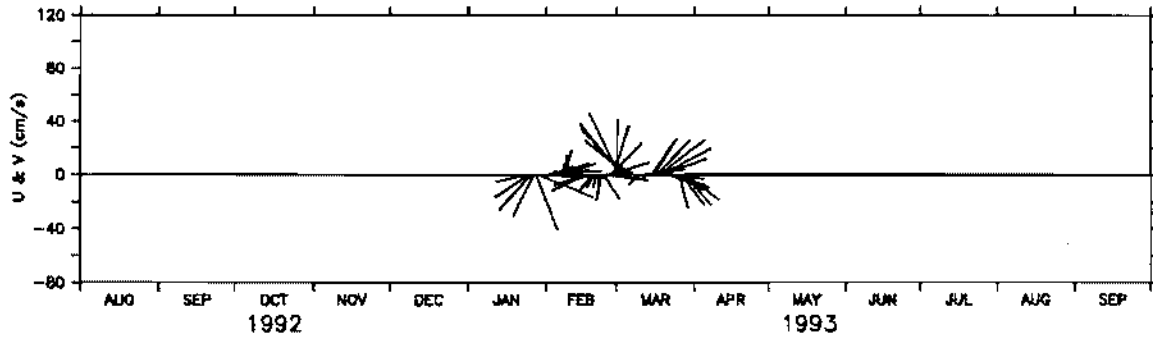
Date fin et position : 30/03/93 à 0.55°S, 159.40°E

End date and position

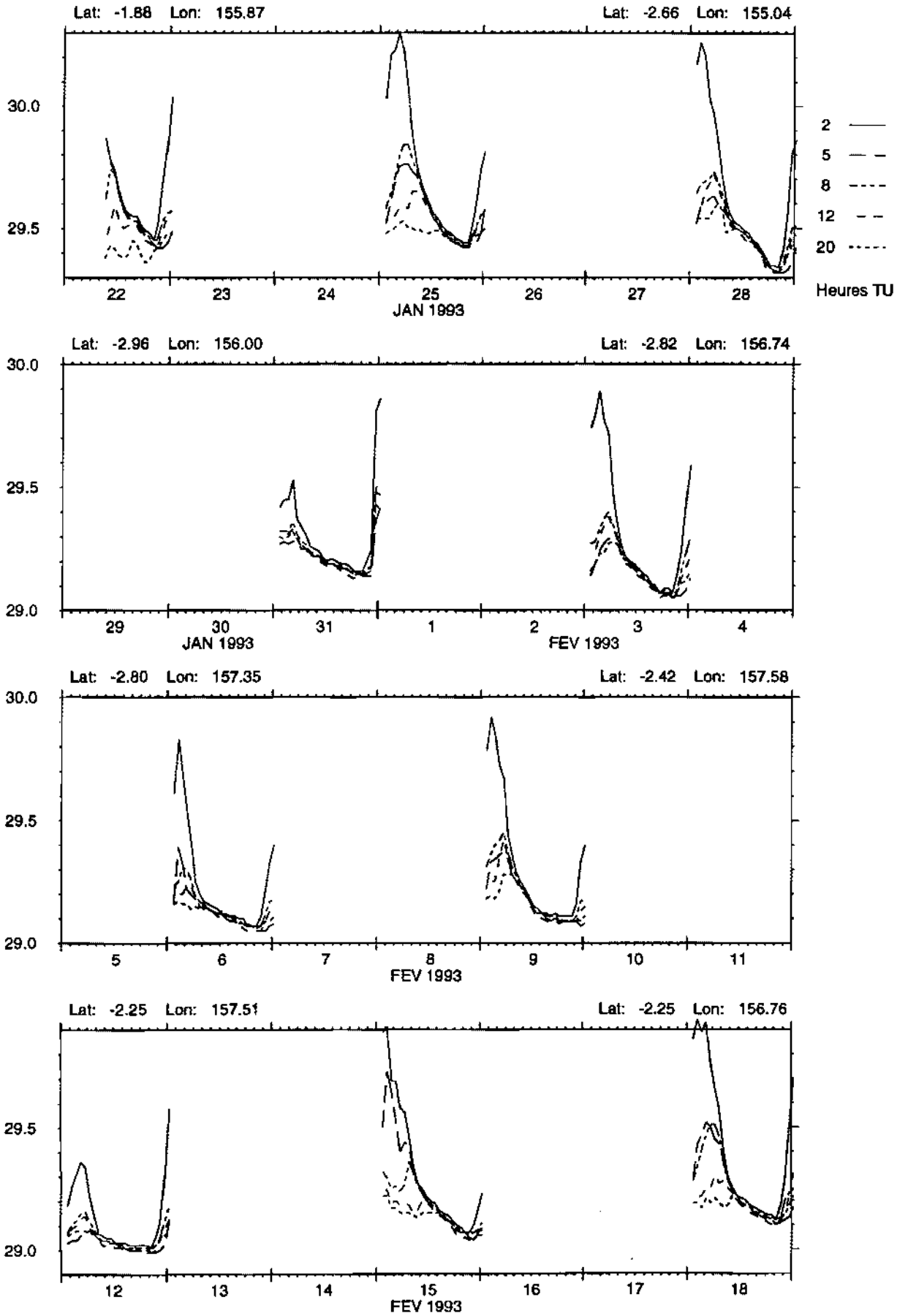
2683



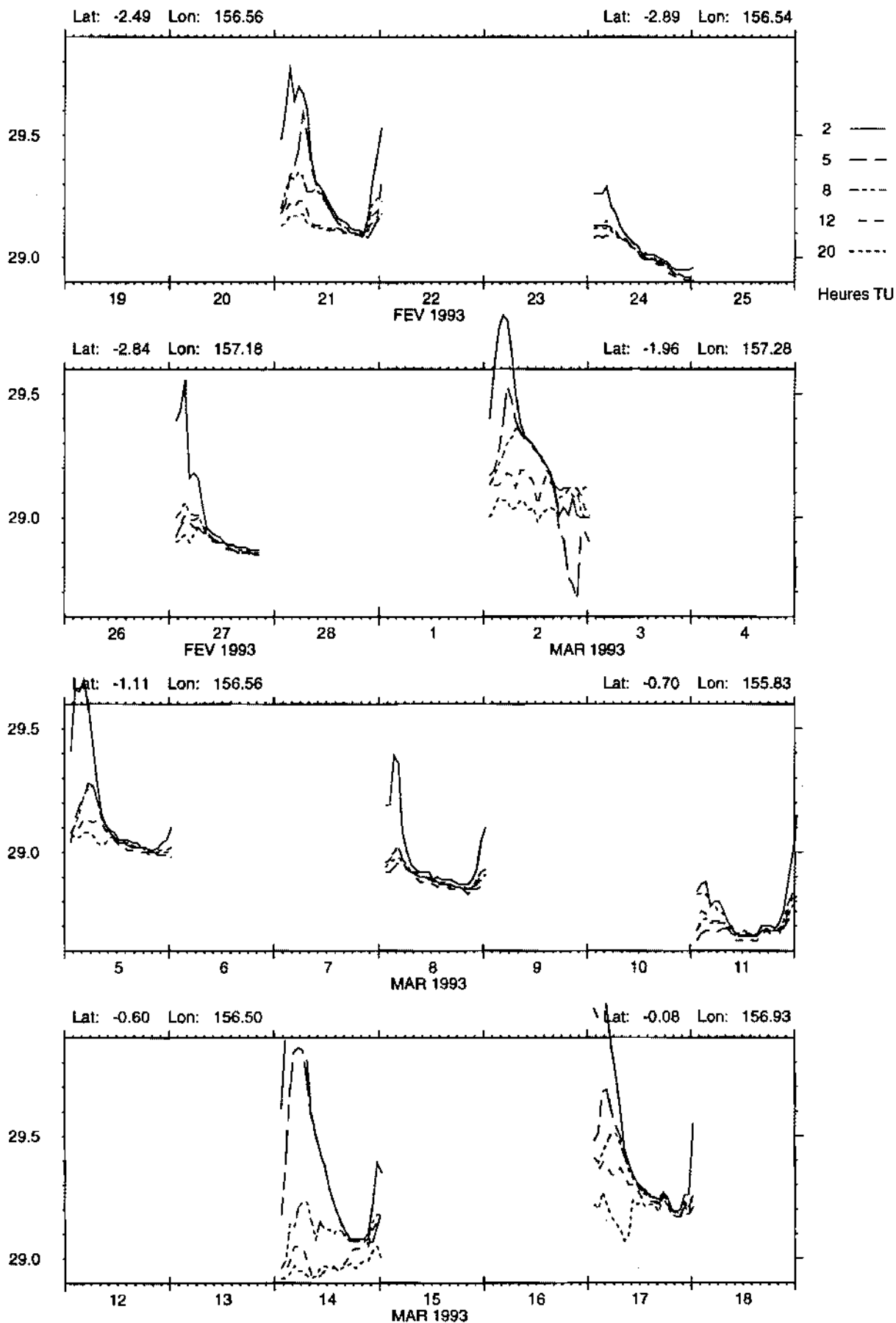
N°2683



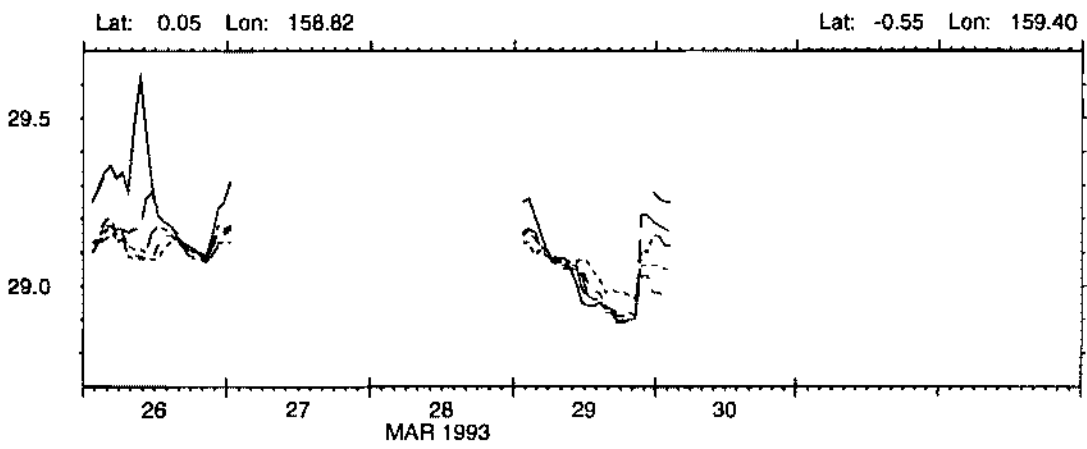
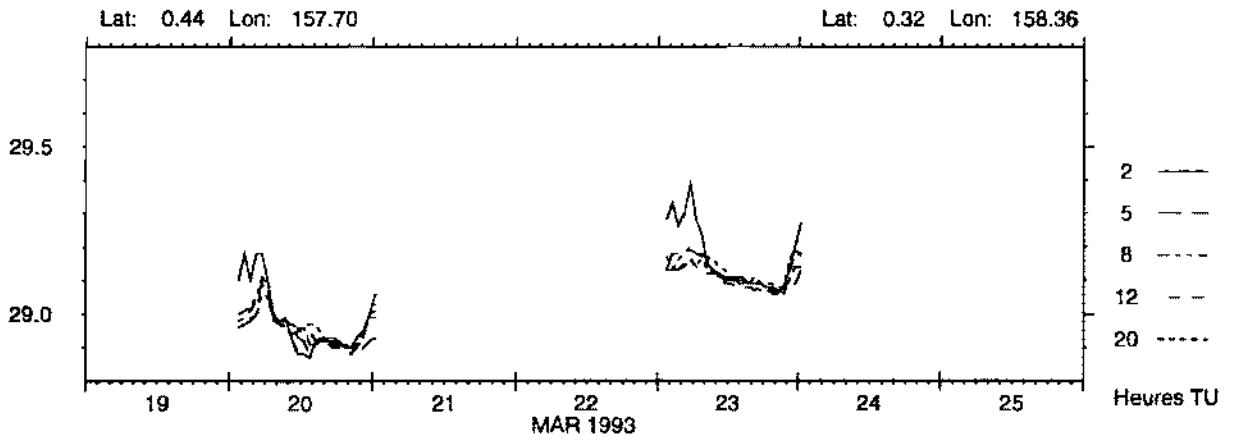
02683

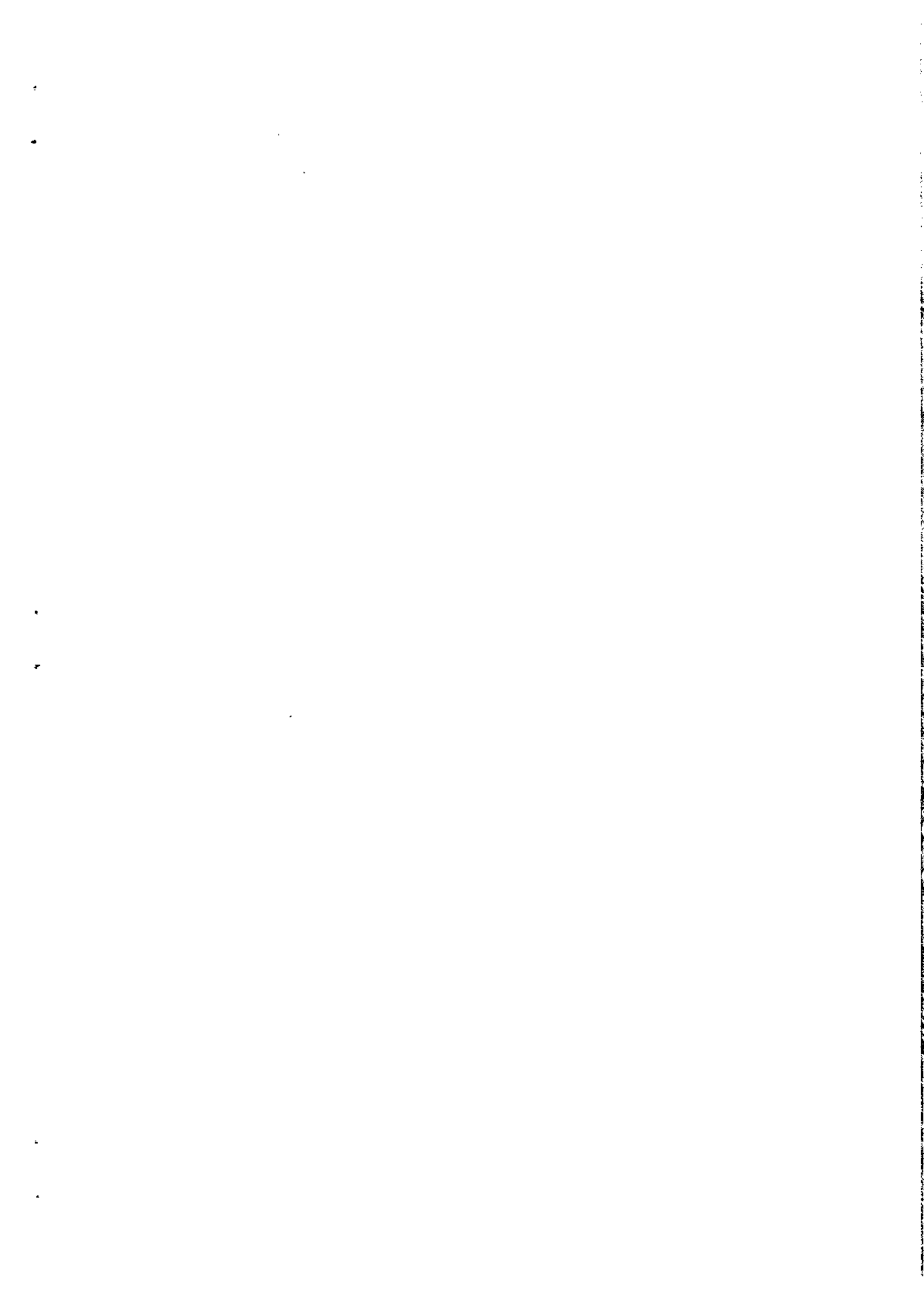


02683



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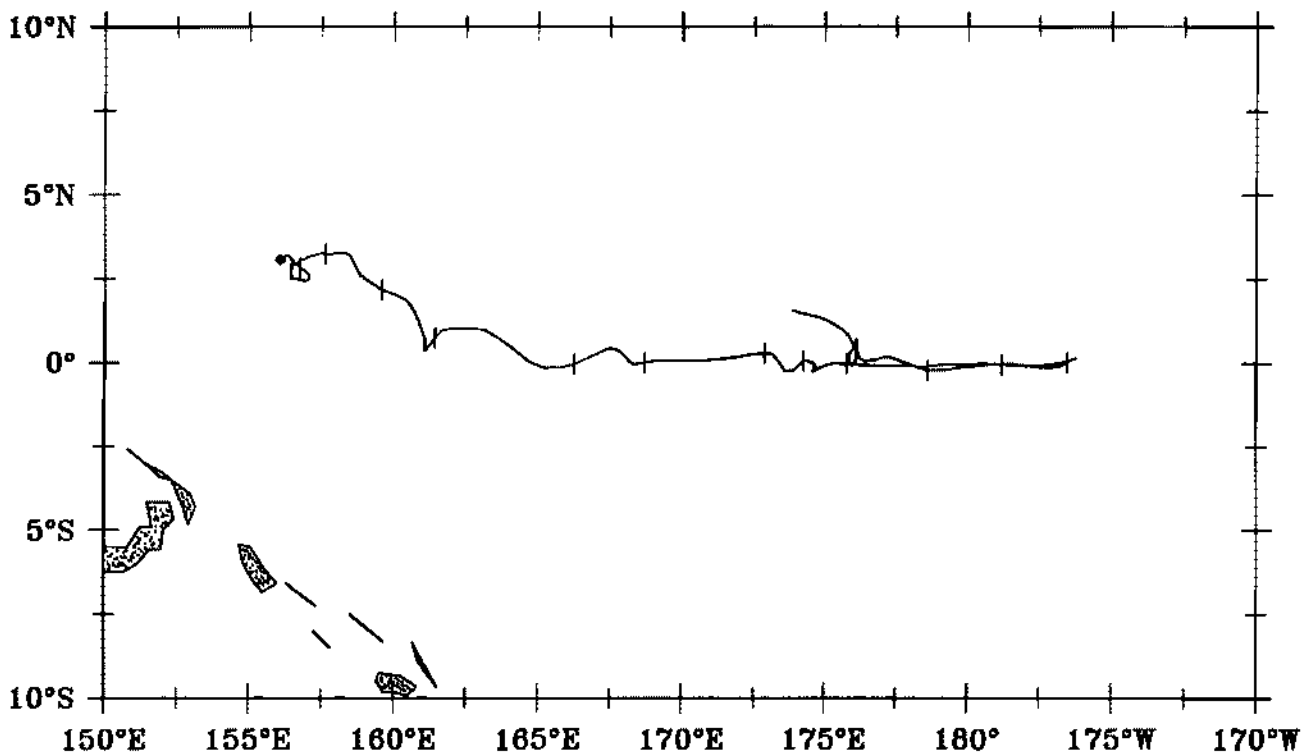
Bouée dérivante BODEGA n°2684

Date début et position : 24/09/92 à 3.08°N, 156.10°E
Launching date and position
Date fin et position : 25/02/93 à 1.57°N, 173.88°E
End date and position

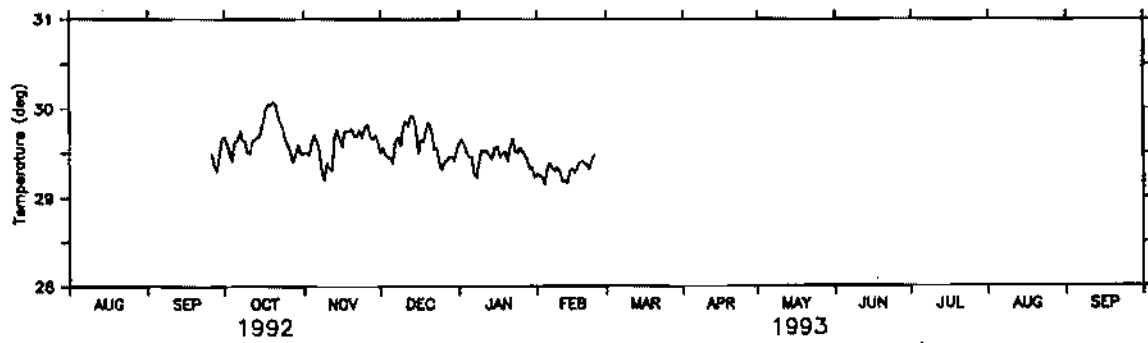
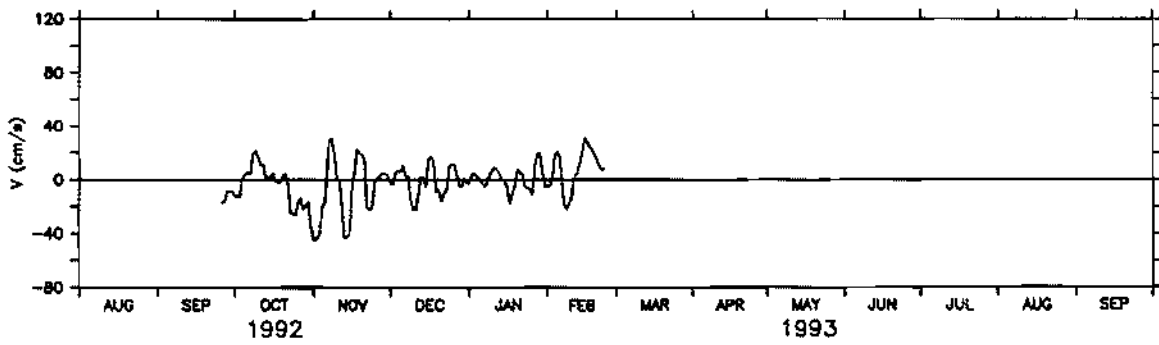
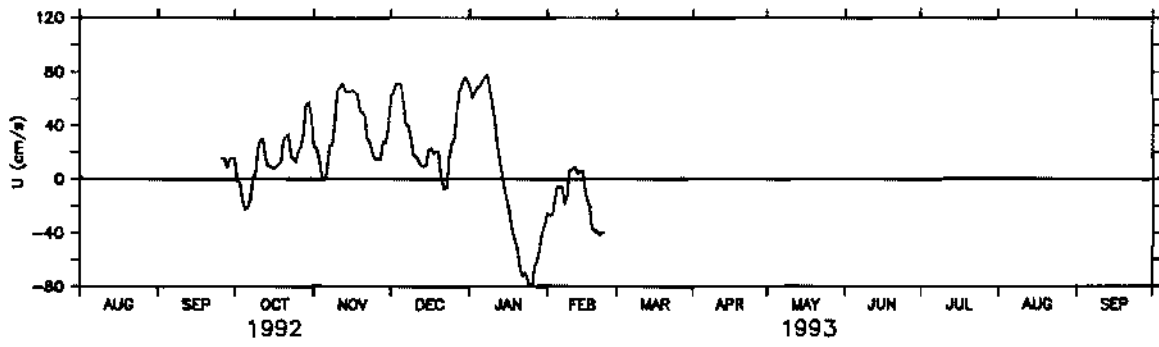
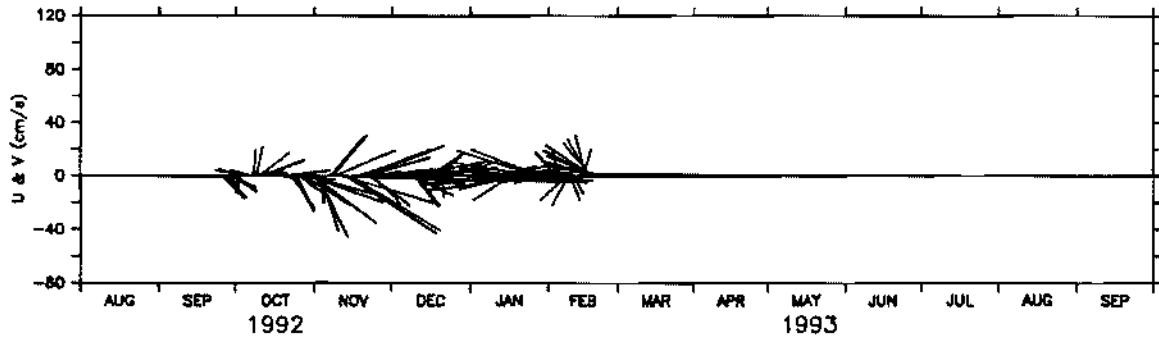
Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

. cycle 23 (27/11/92) : +0.03 capteur 2m
. cycle 34 (30/12/92) : +0.05 capteur 5m
. cycle 38 (11/01/93) : +0.07 capteur 5m
. cycle 45 (01/02/93) : +0.04 capteur 5m

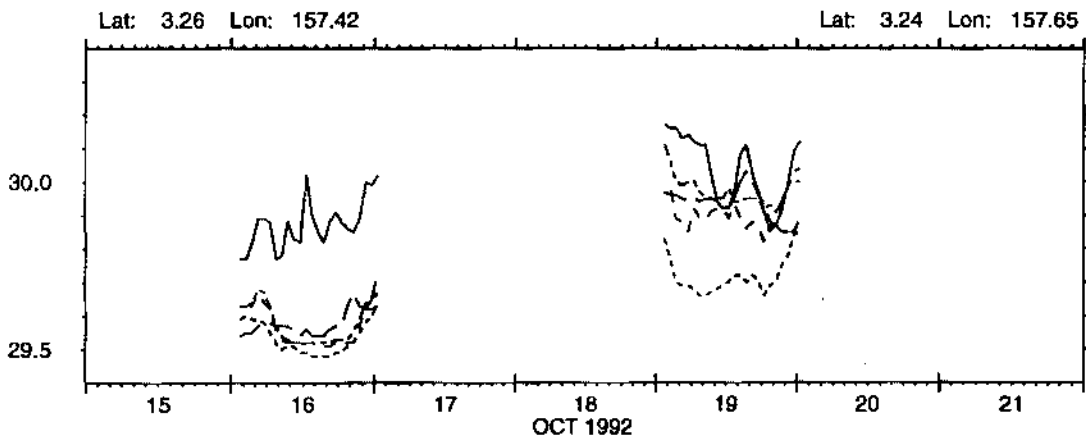
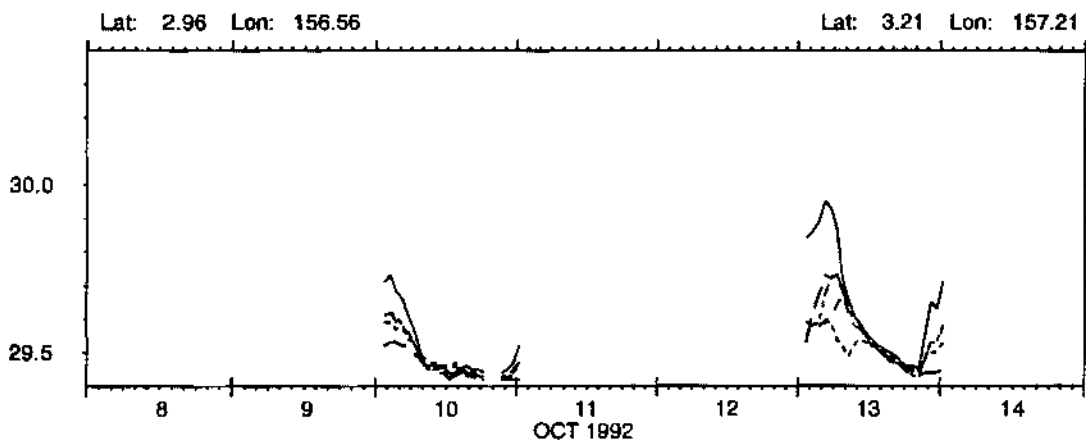
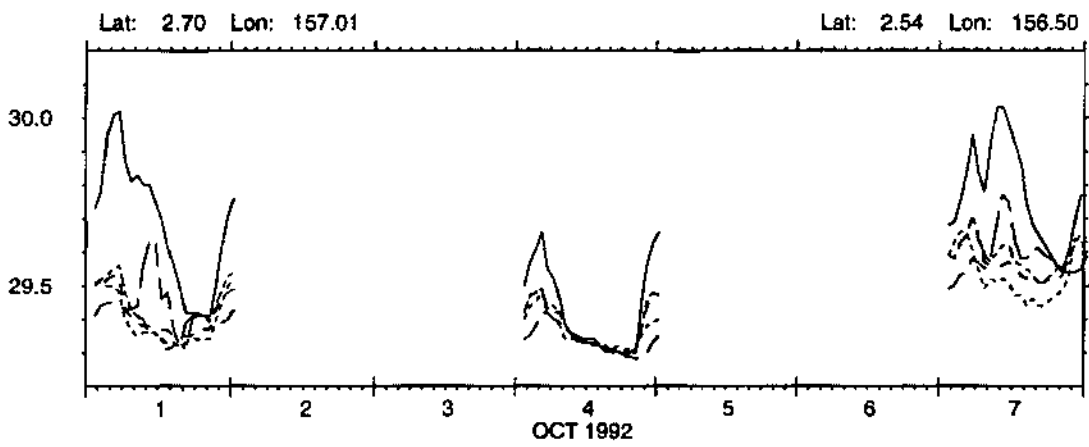
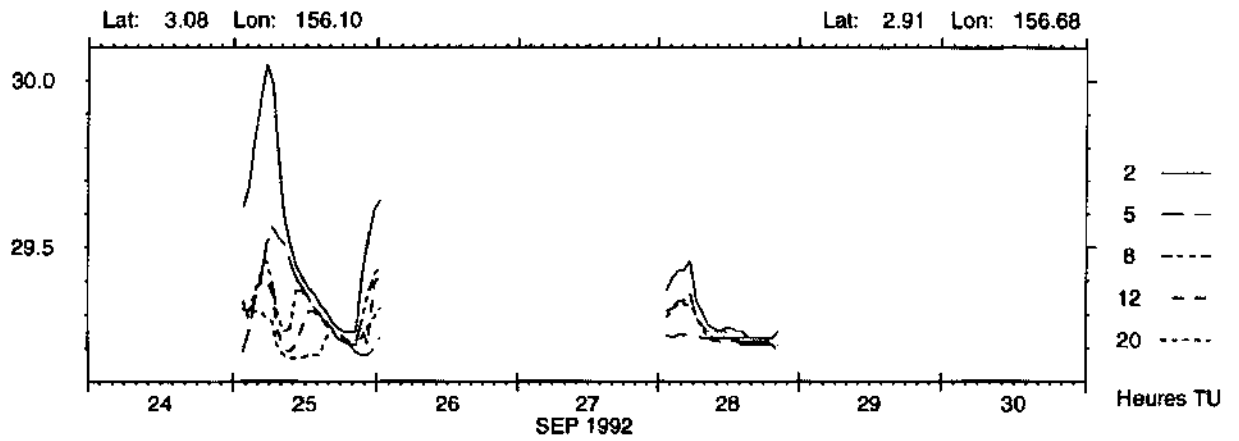
2684



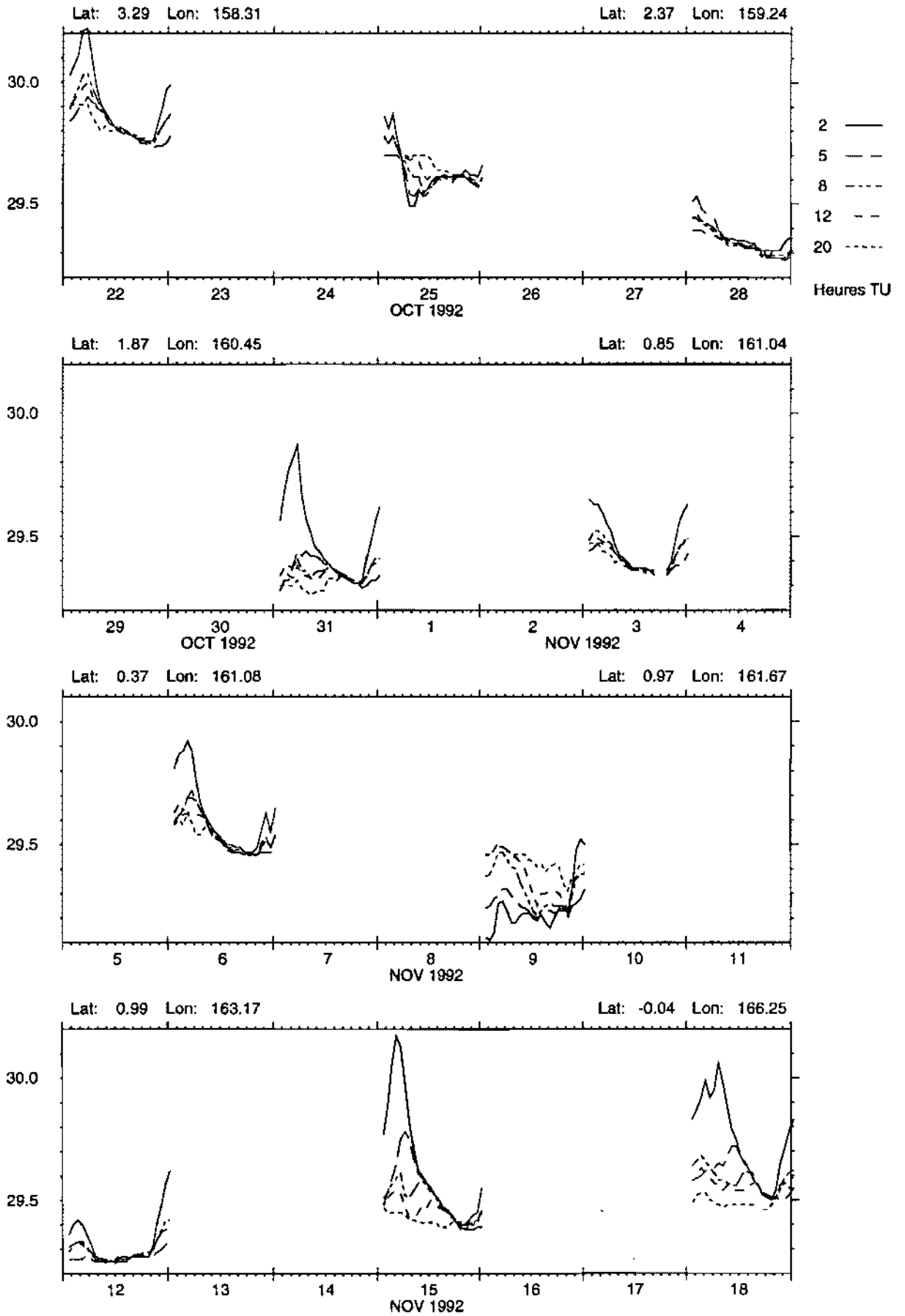
N°2684



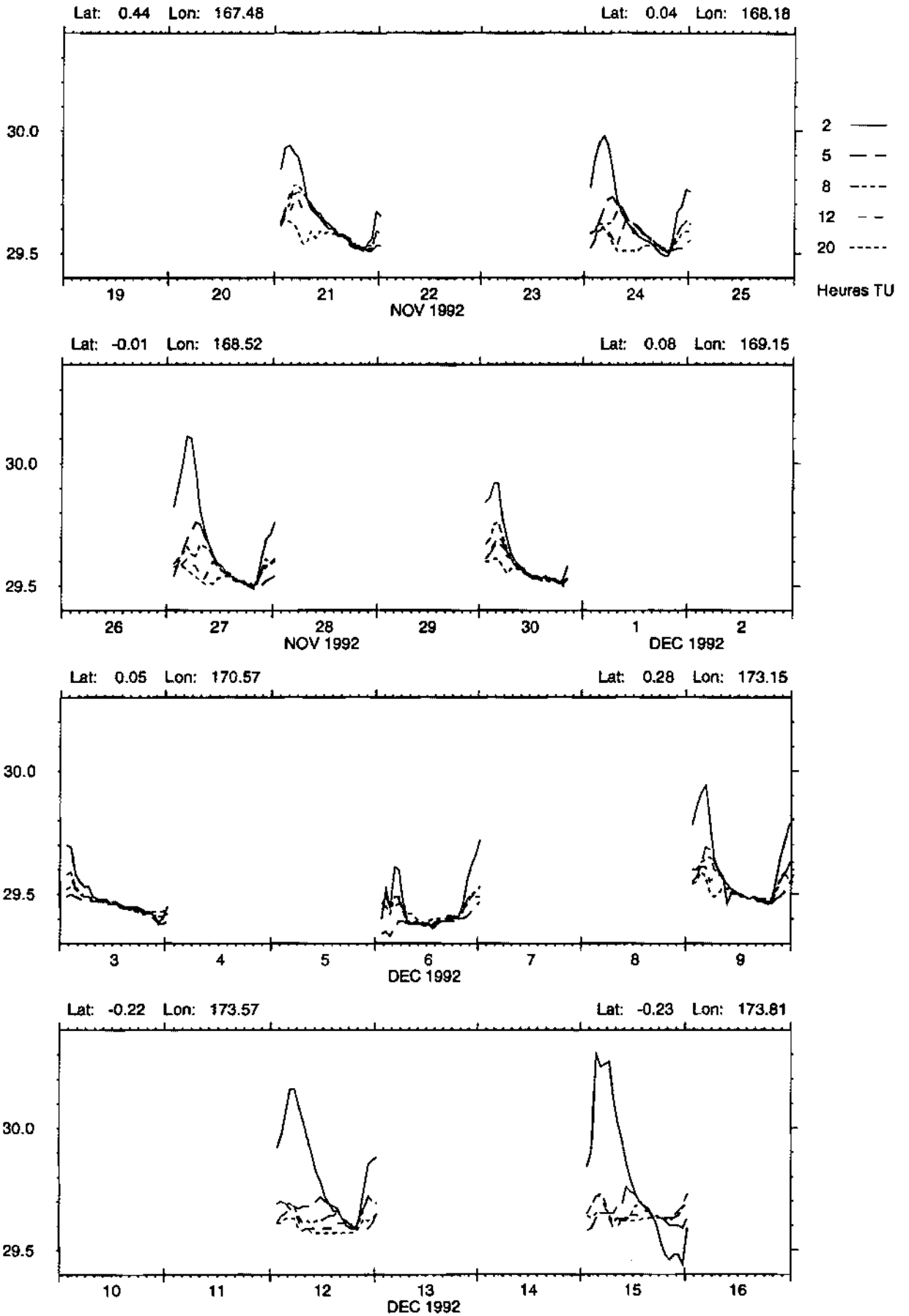
02684



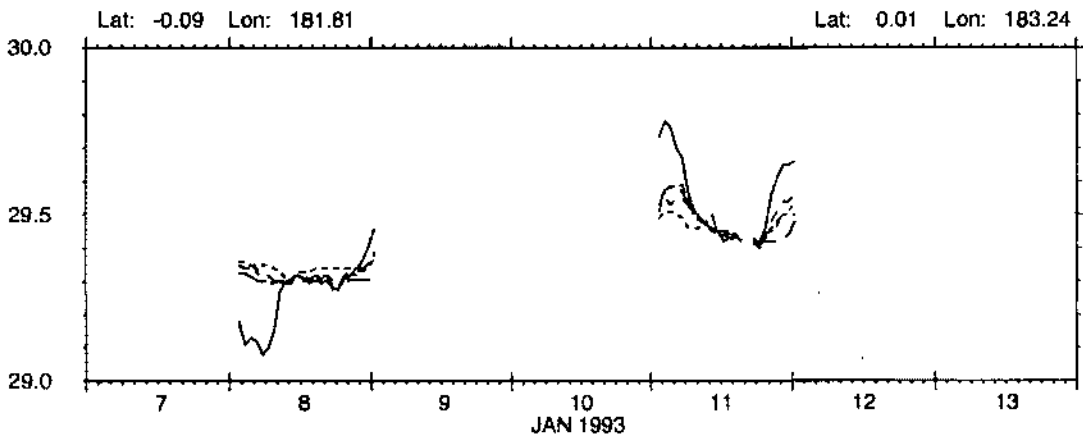
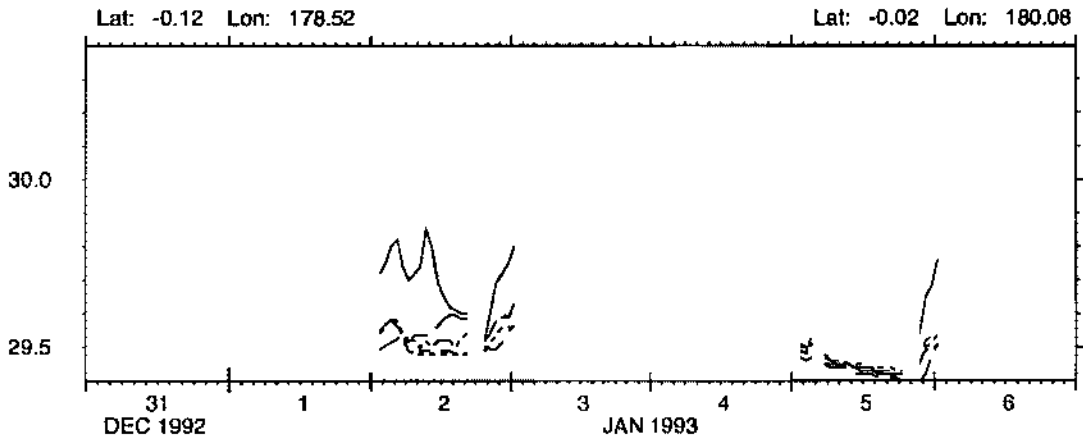
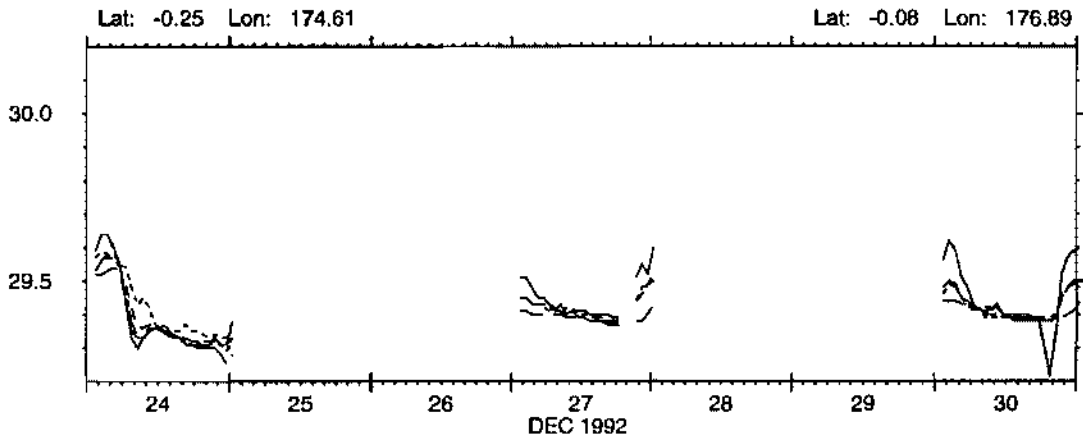
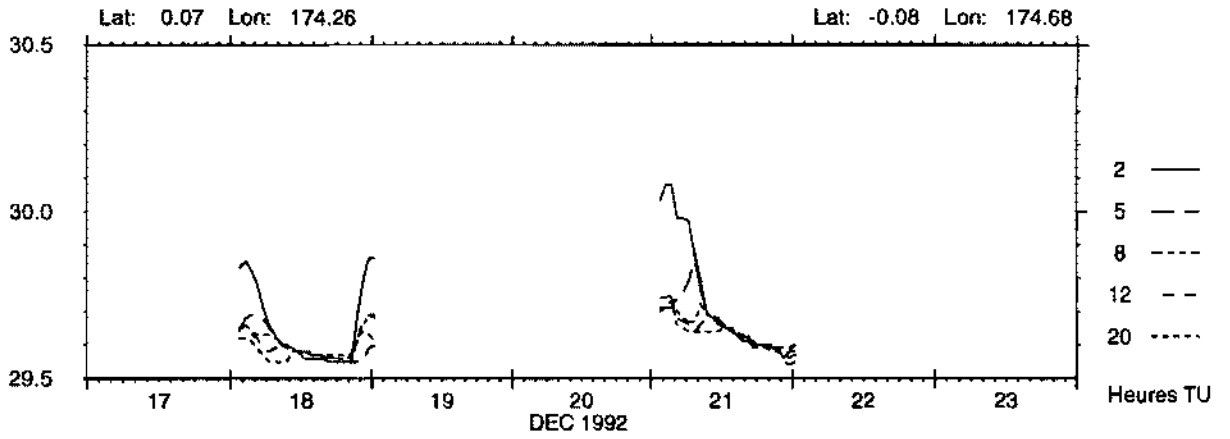
02684



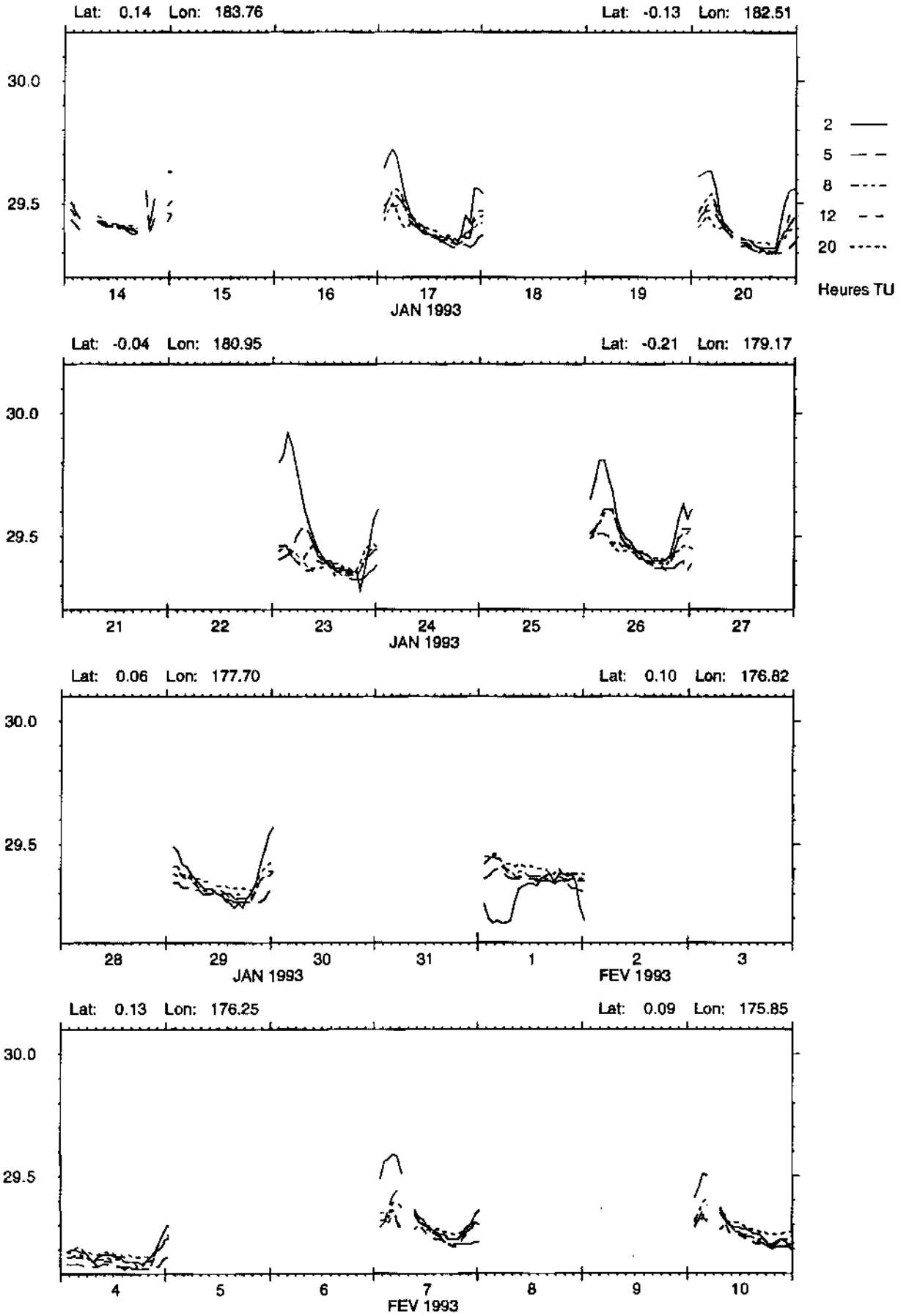
02684



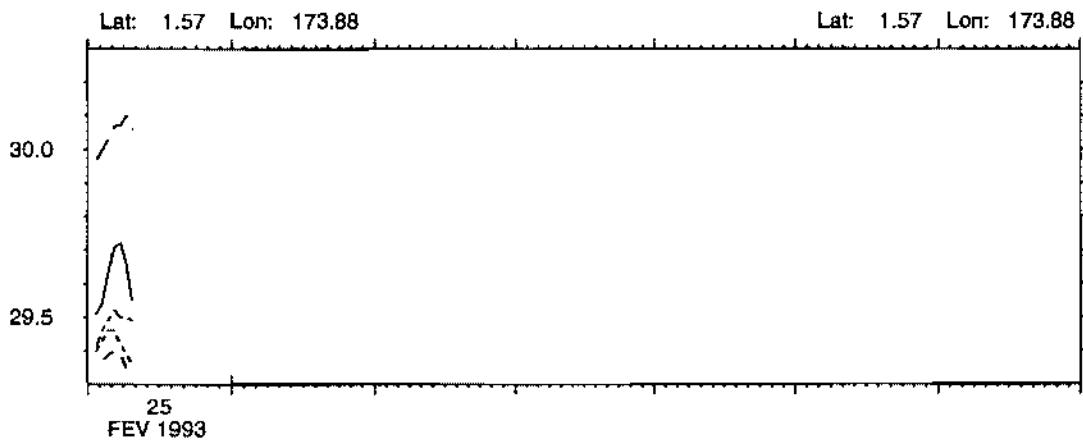
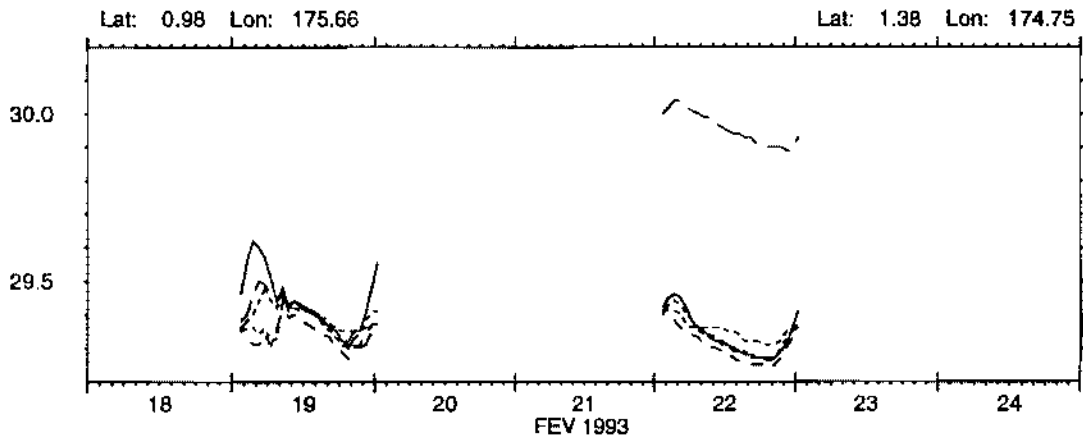
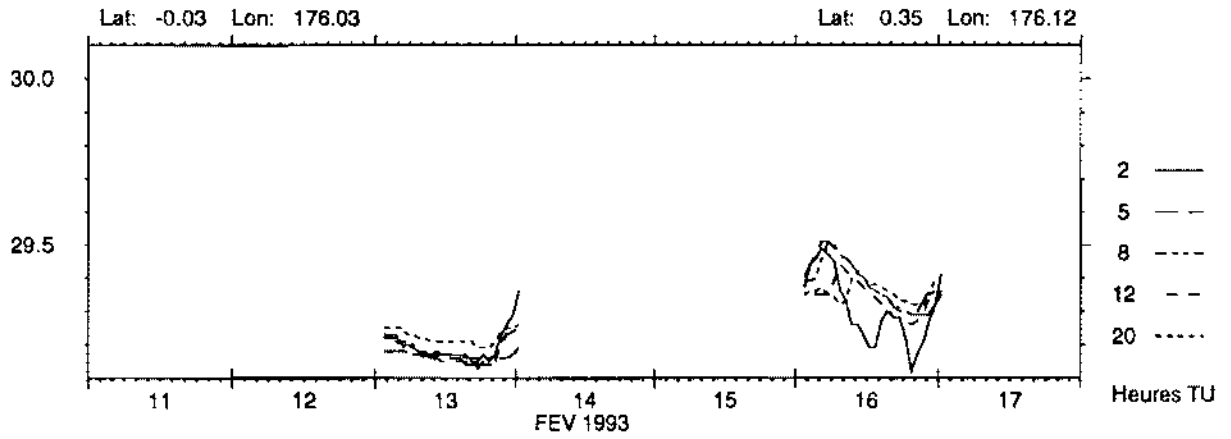
02684



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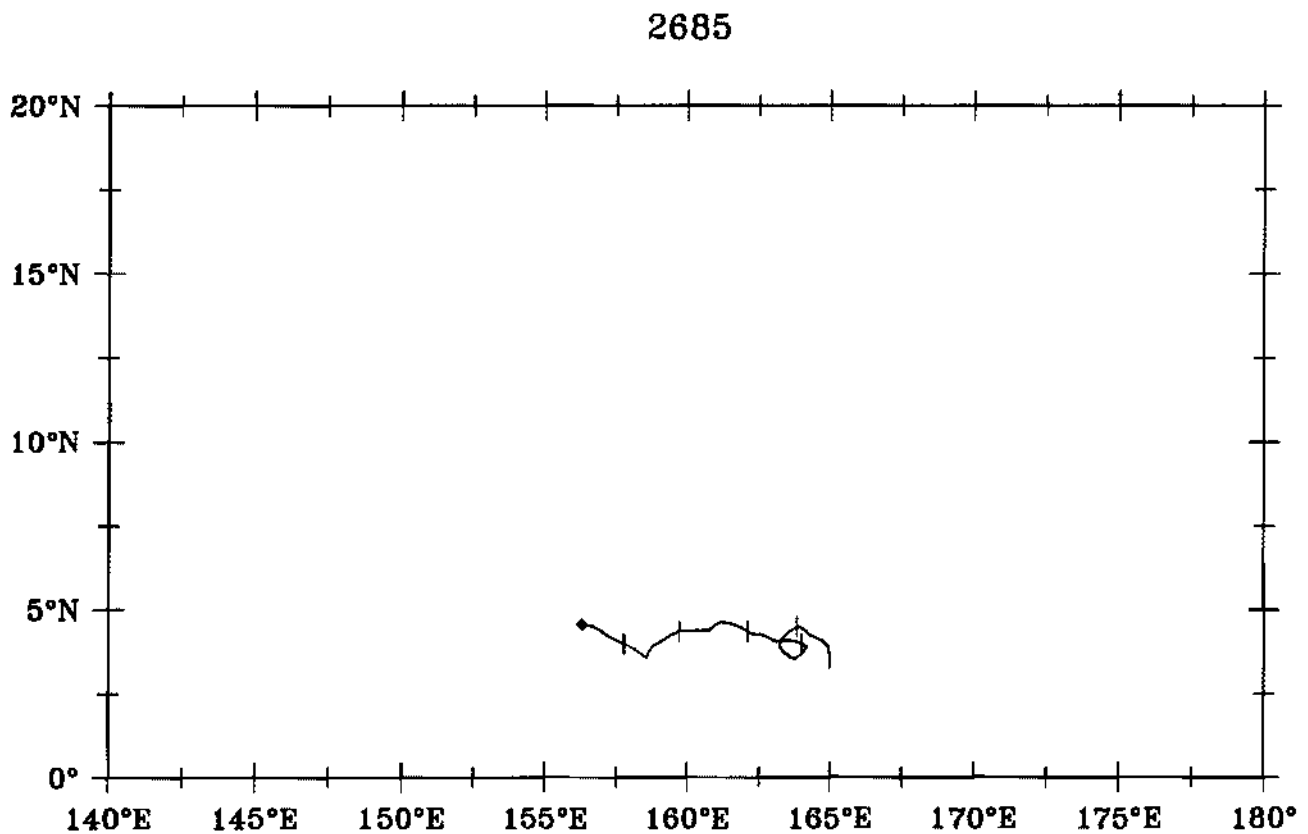


02684

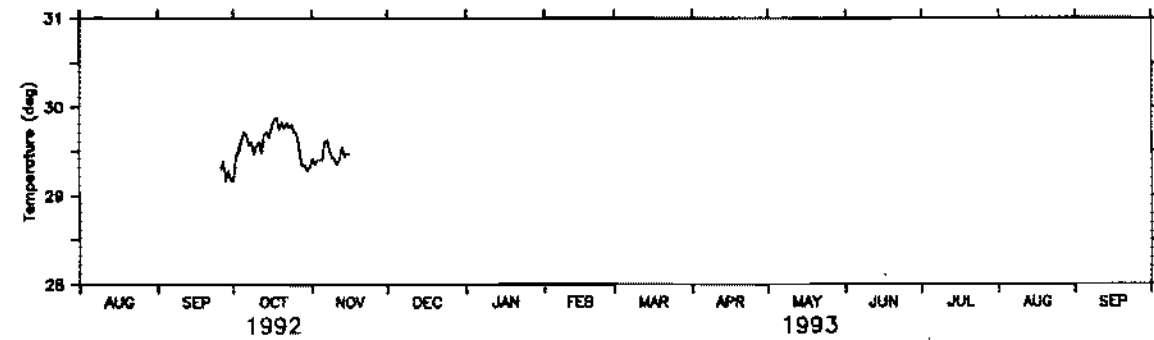
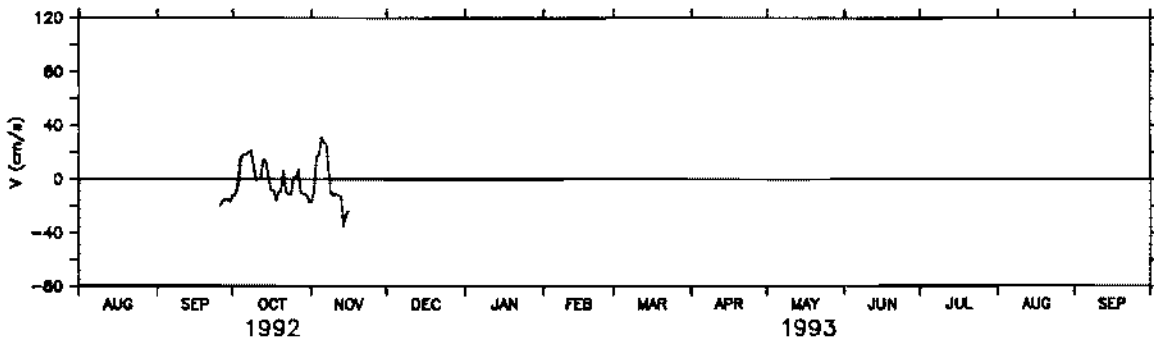
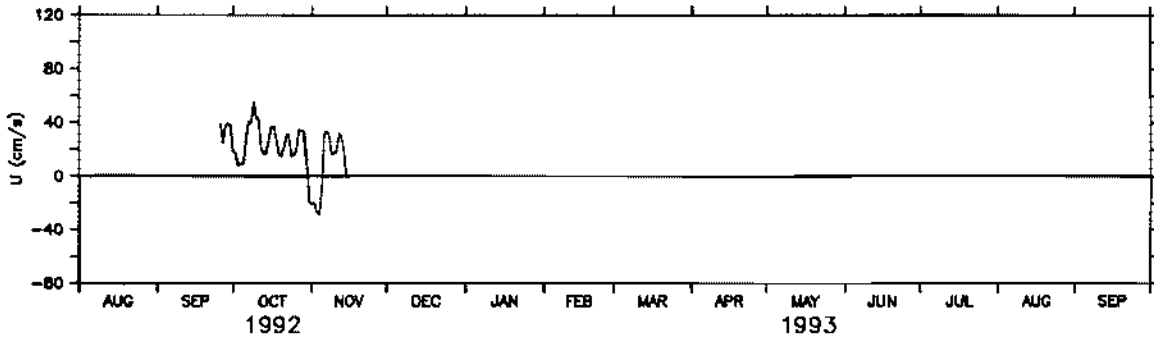
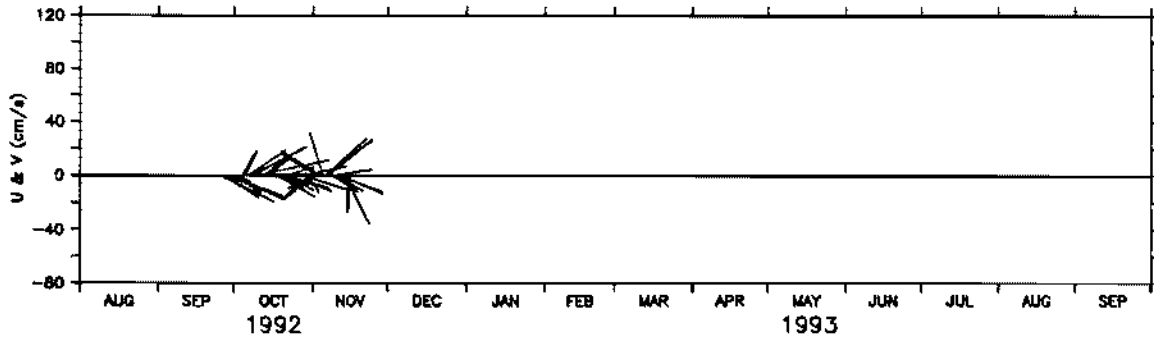


Bouée dérivante BODEGA n°2685

Date début et position : 23/09/92 à 4.51°N, 156.10°E
Launching date and position
Date fin et position : 17/11/92 à 3.21°N, 165.02°E
End date and position

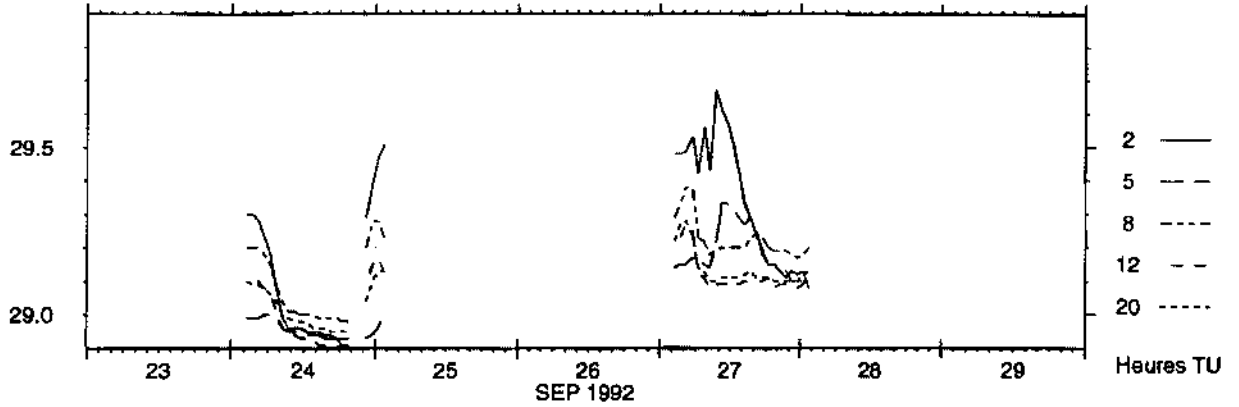


N°2685



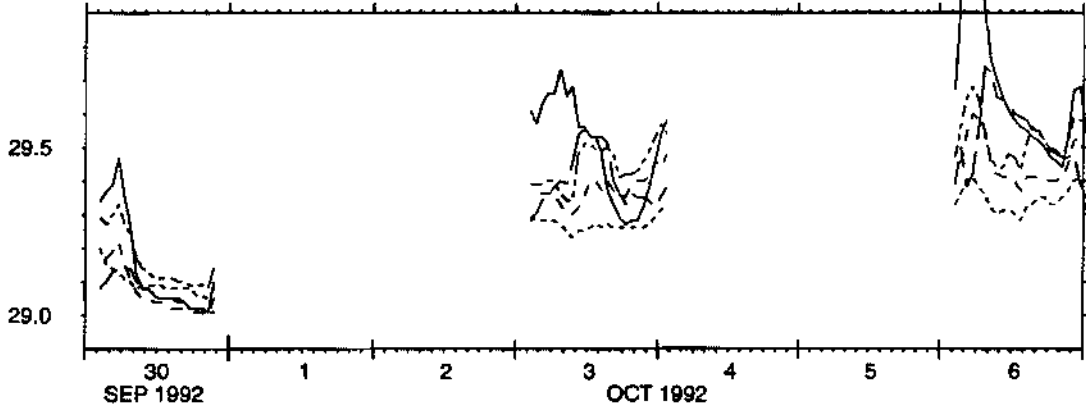
02685

Lat: 4.10 Lon: 157.46



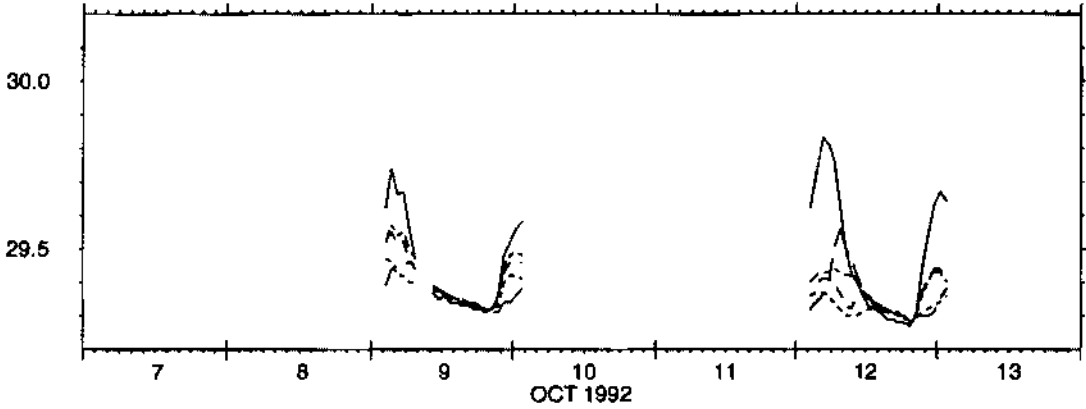
Lat: 3.86 Lon: 158.07

Lat: 3.92 Lon: 158.77



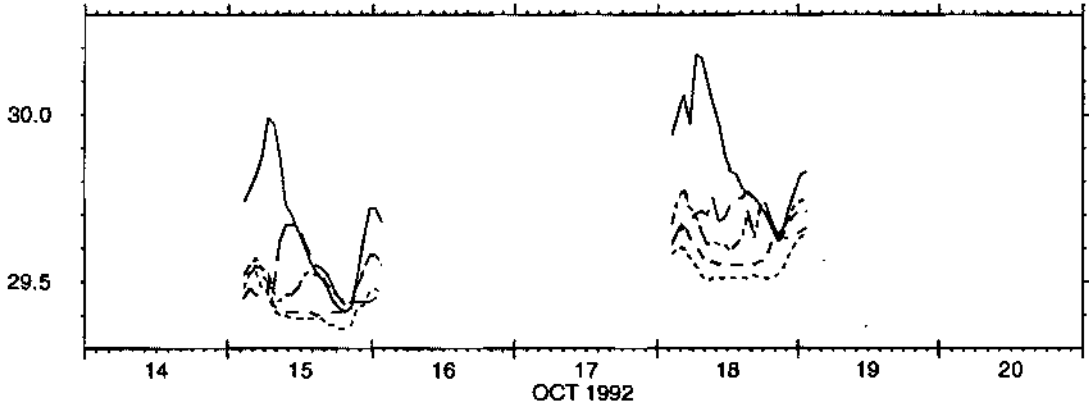
Lat: 4.05 Lon: 159.06

Lat: 4.46 Lon: 160.85

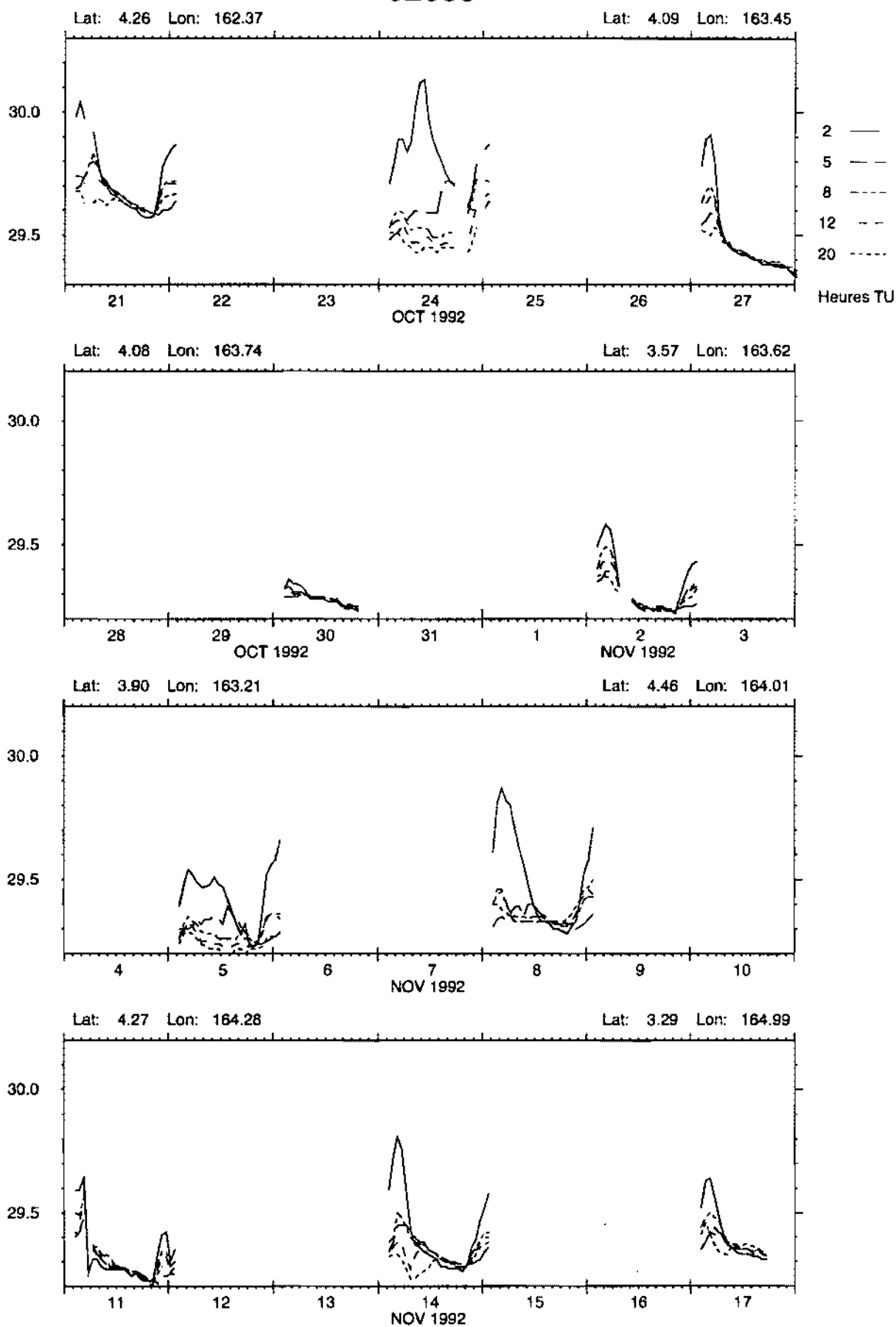


Lat: 4.63 Lon: 161.15

Lat: 4.35 Lon: 162.12



02685



Bouée dérivante BODEGA n°2686

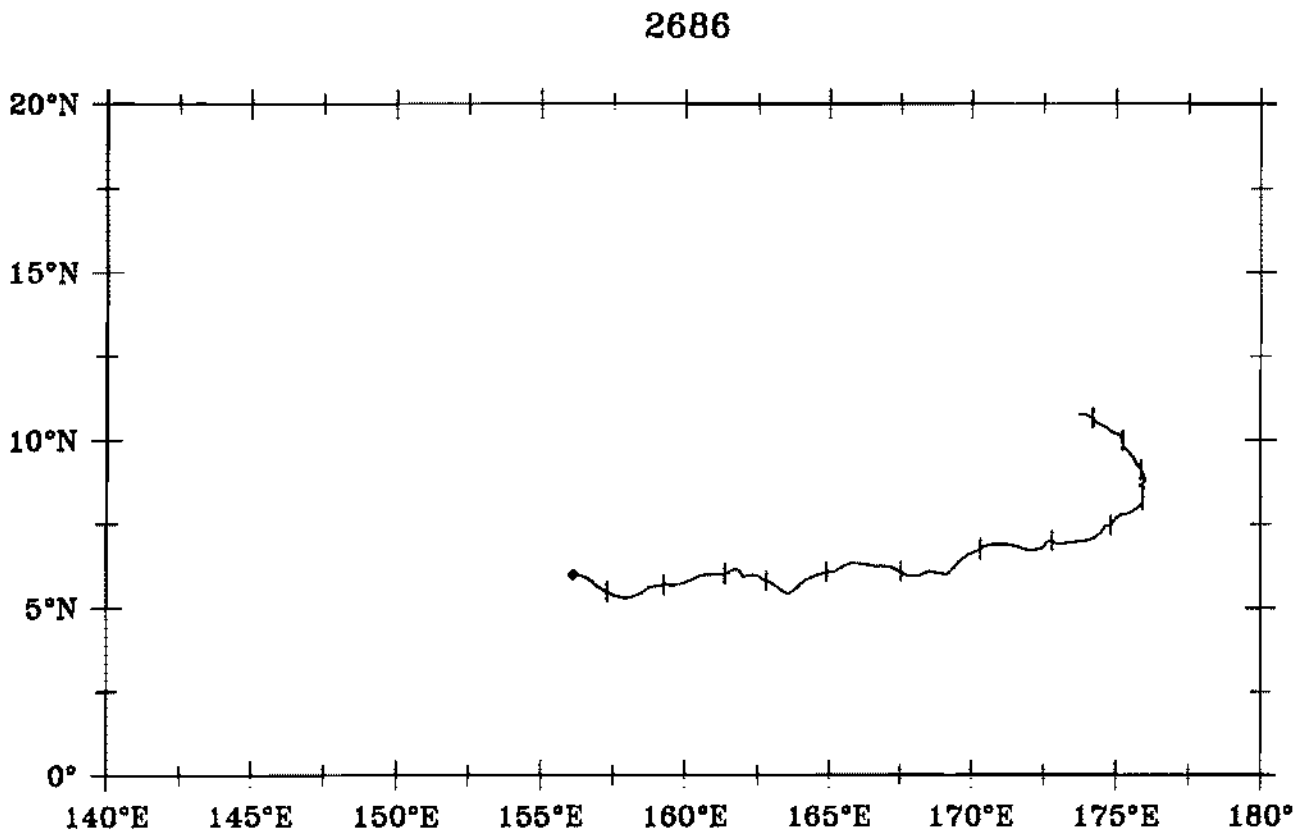
Date début et position : 23/09/92 à 5.99°N, 156.10°E

Launching date and position

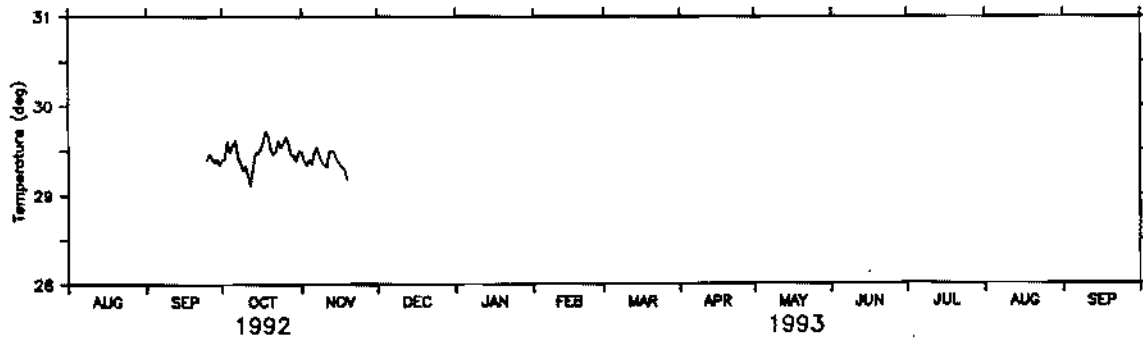
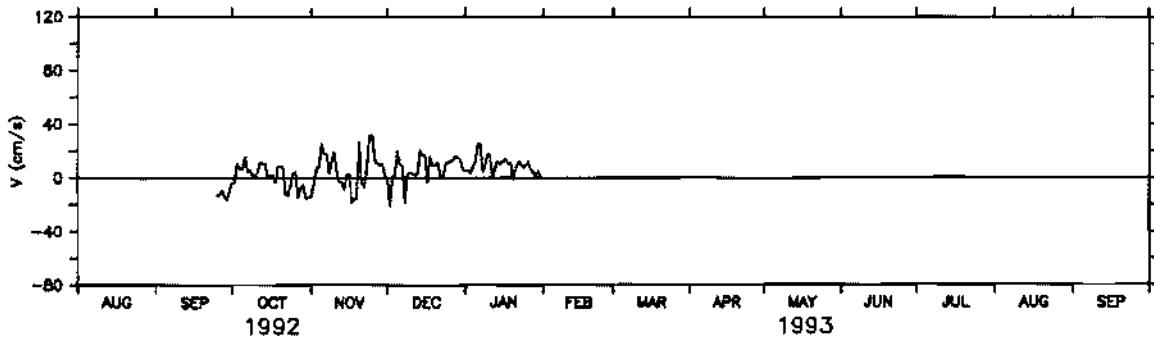
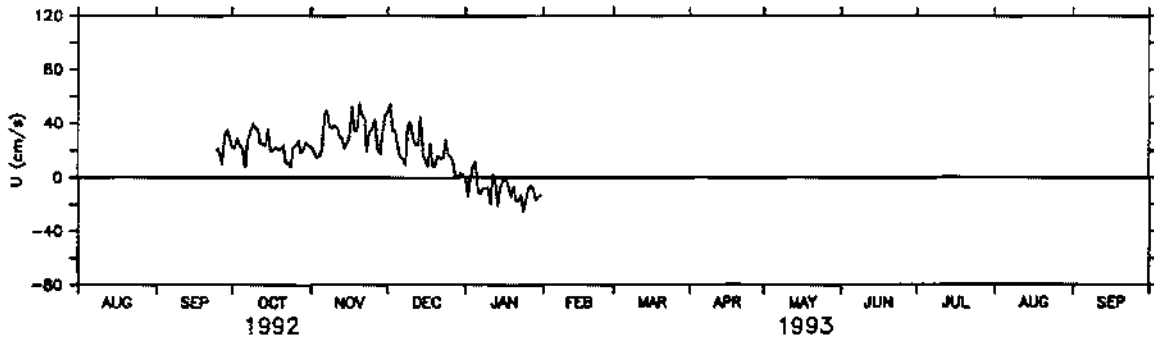
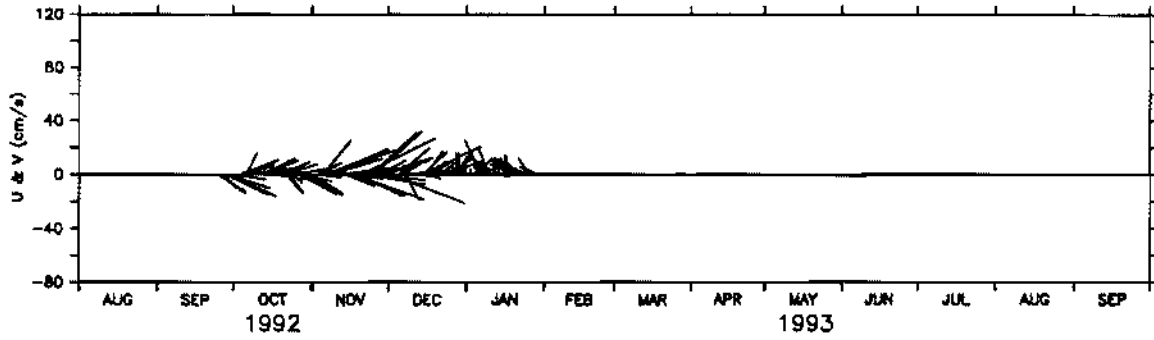
Date fin et position : 01/02/93 à 10.77°N, 173.73°E

End date and position

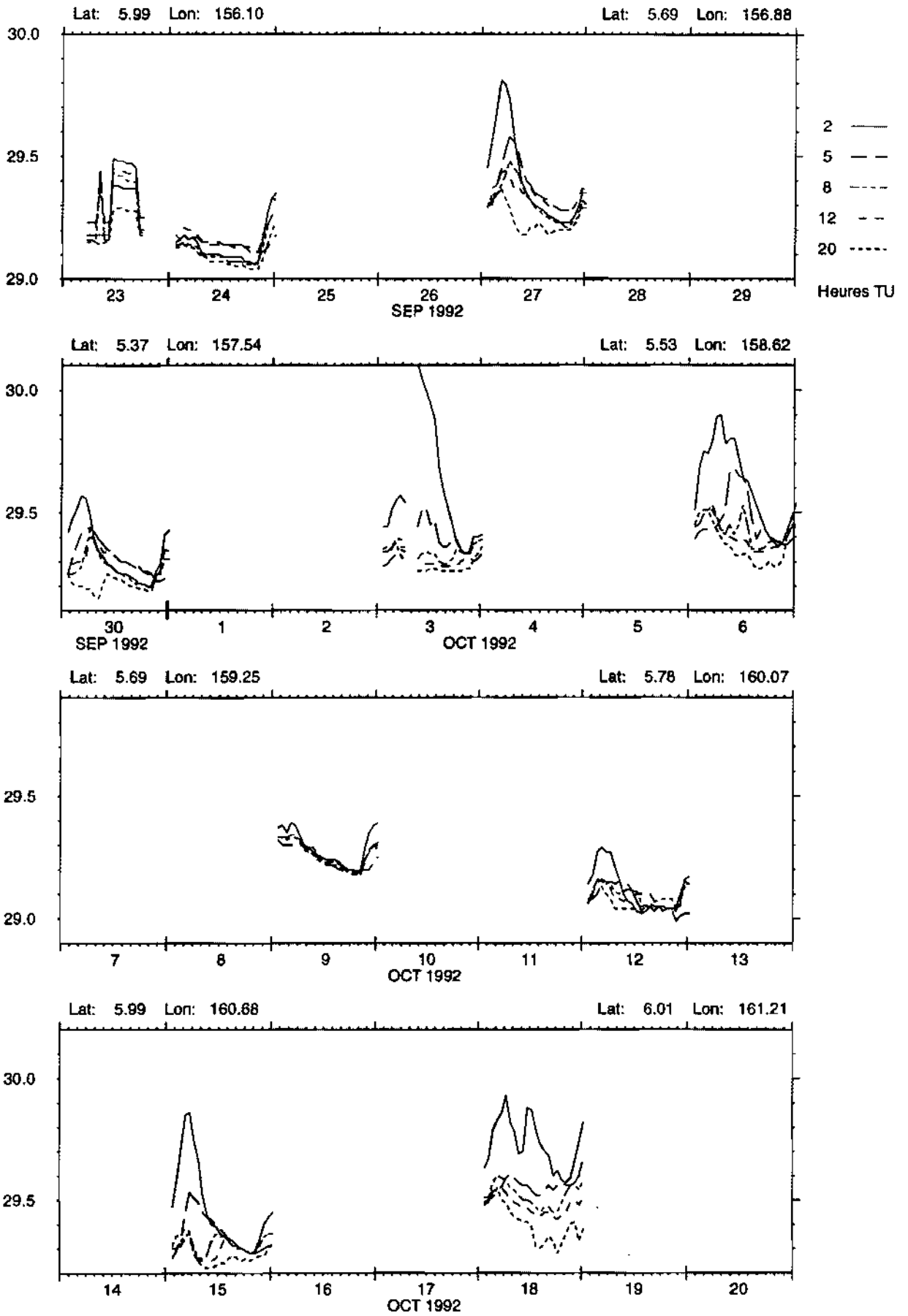
Arrêt données de température le 17/11/92, position : 6.21°N, 167.18°E



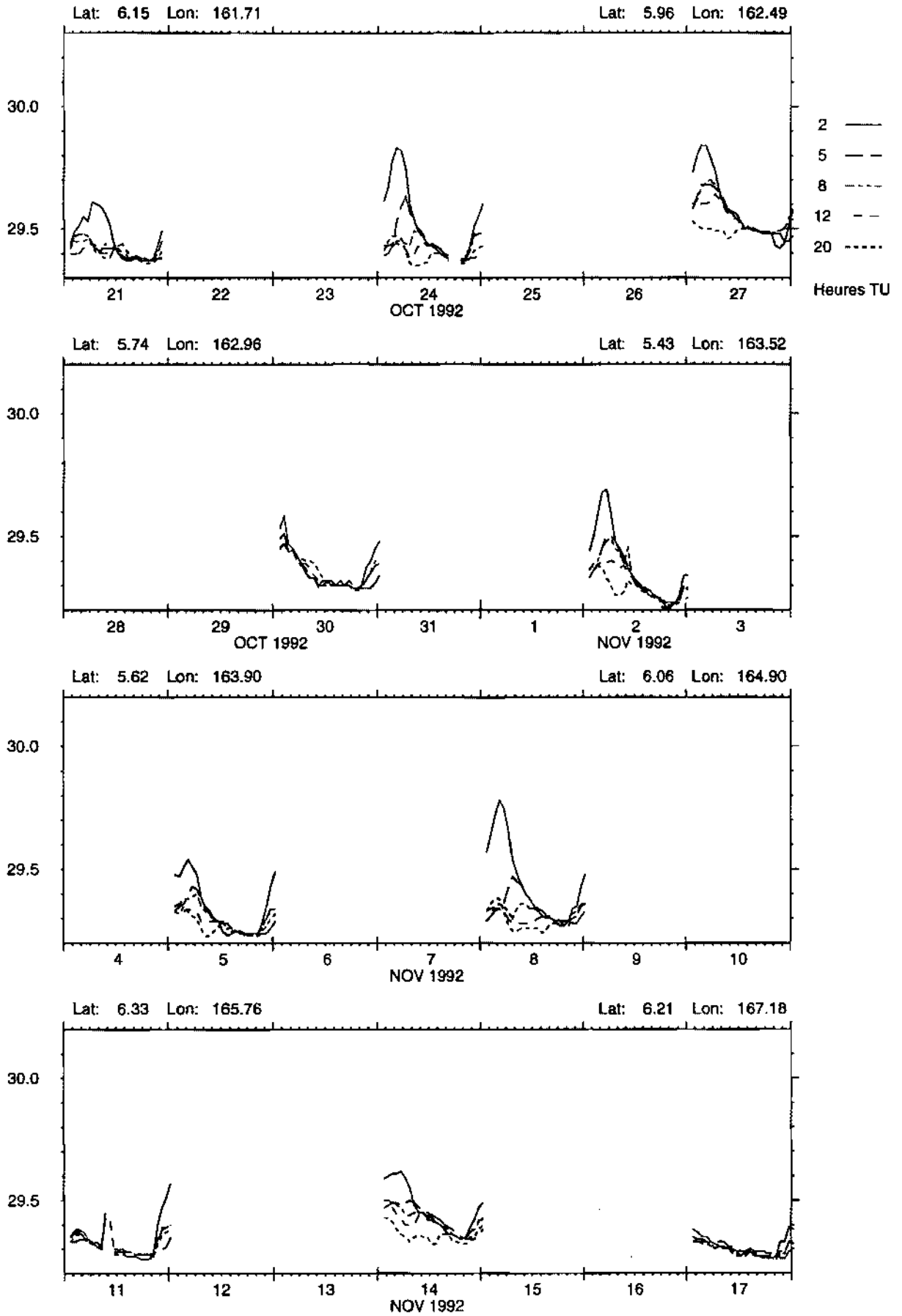
N°2686



02686



02686



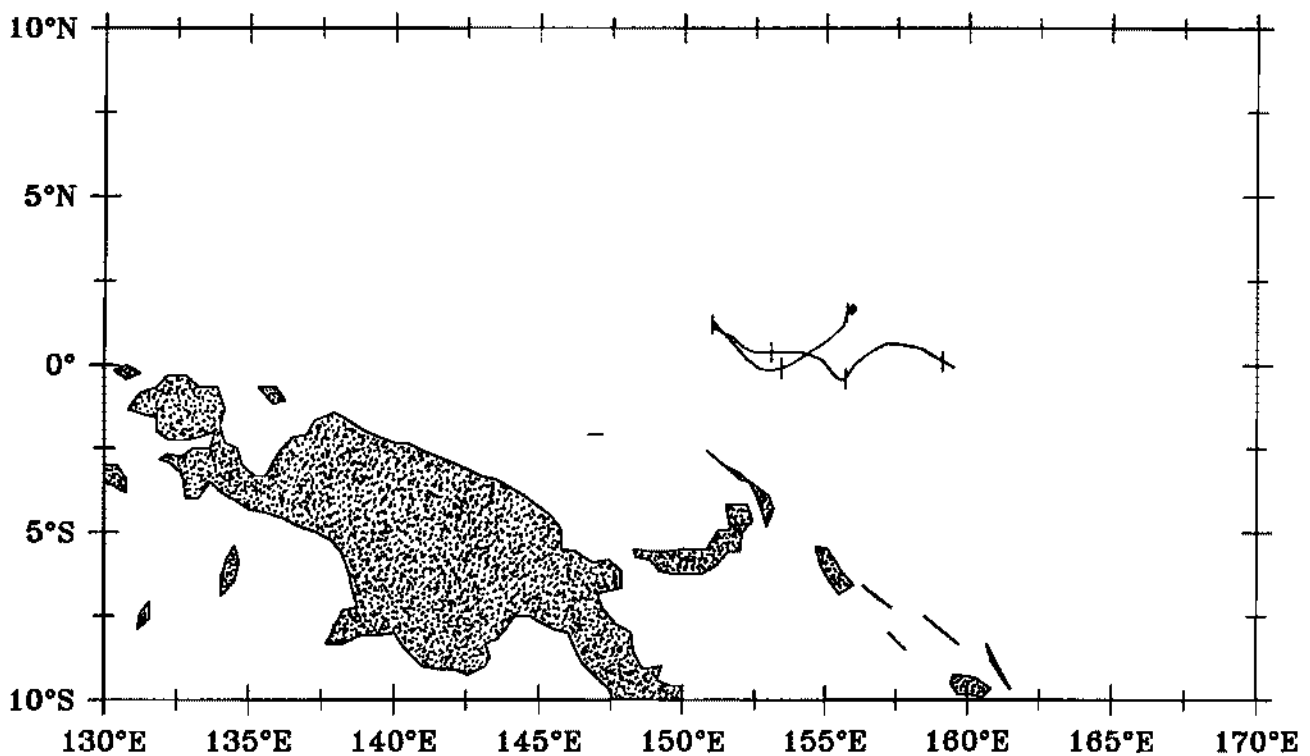
Bouée dérivante BODEGA n°2687

Date début et position : 26/09/92 à 1.65°N, 155.93°E
Launching date and position
Date fin et position : 19/11/92 à 0.06°S, 159.50°E
End date and position

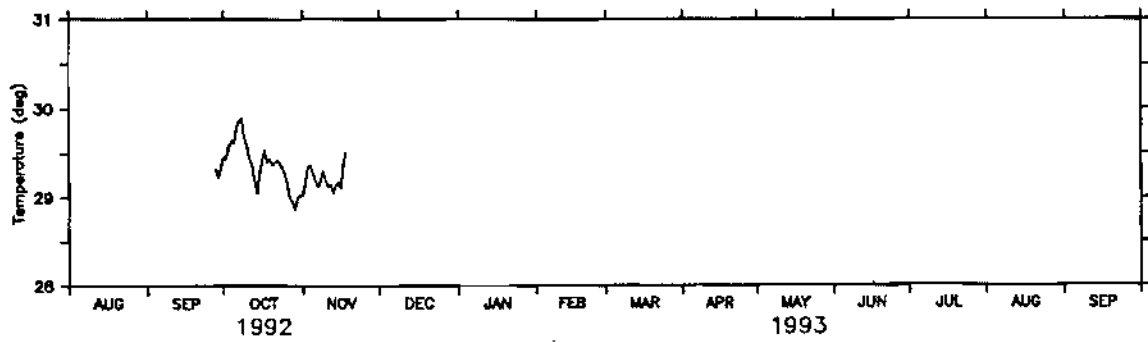
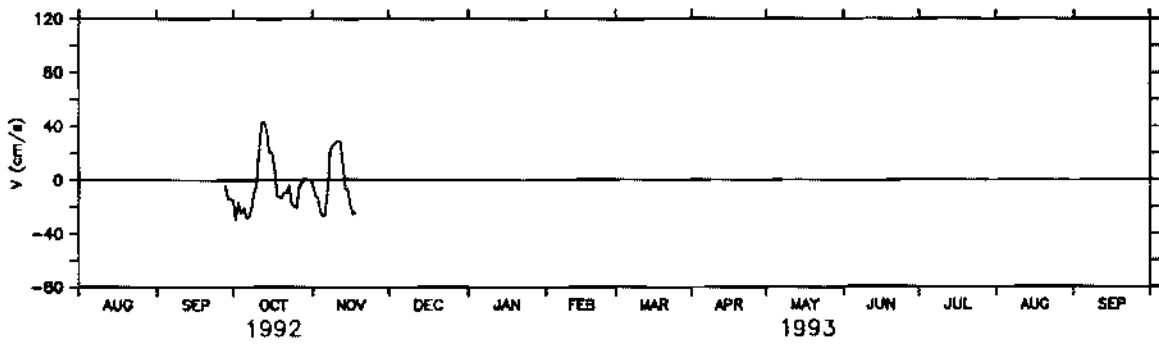
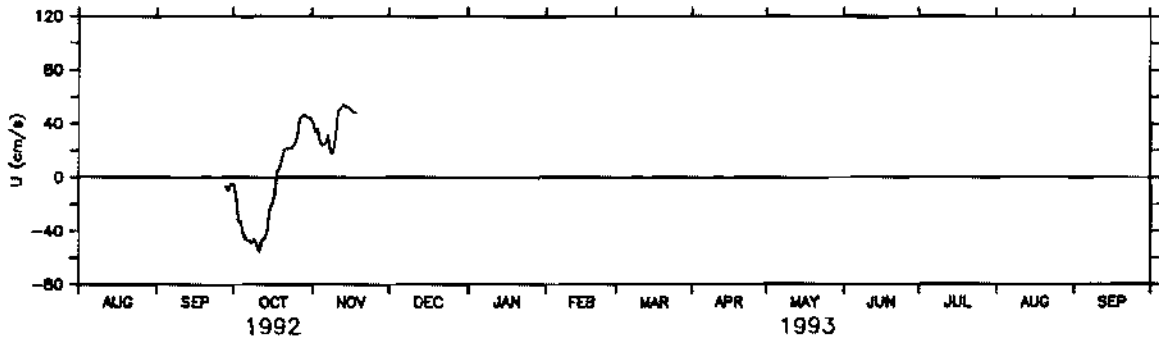
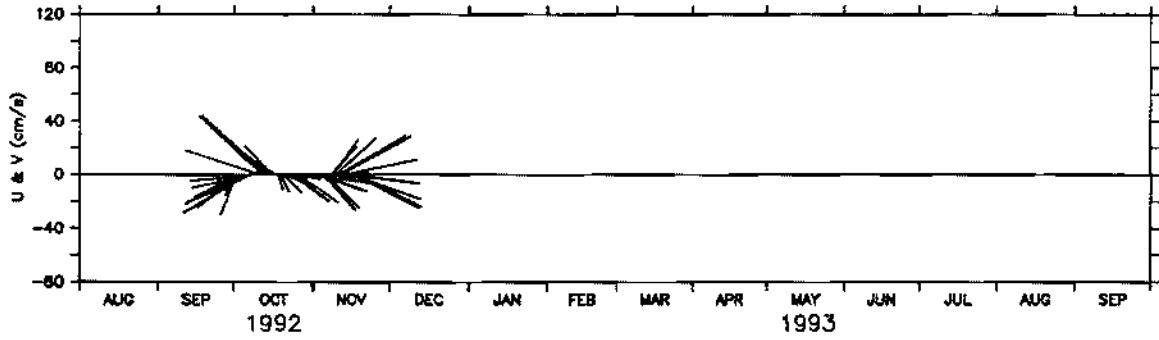
Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

. cycle 18 (16/11/92) : -0.02 capteur 8m

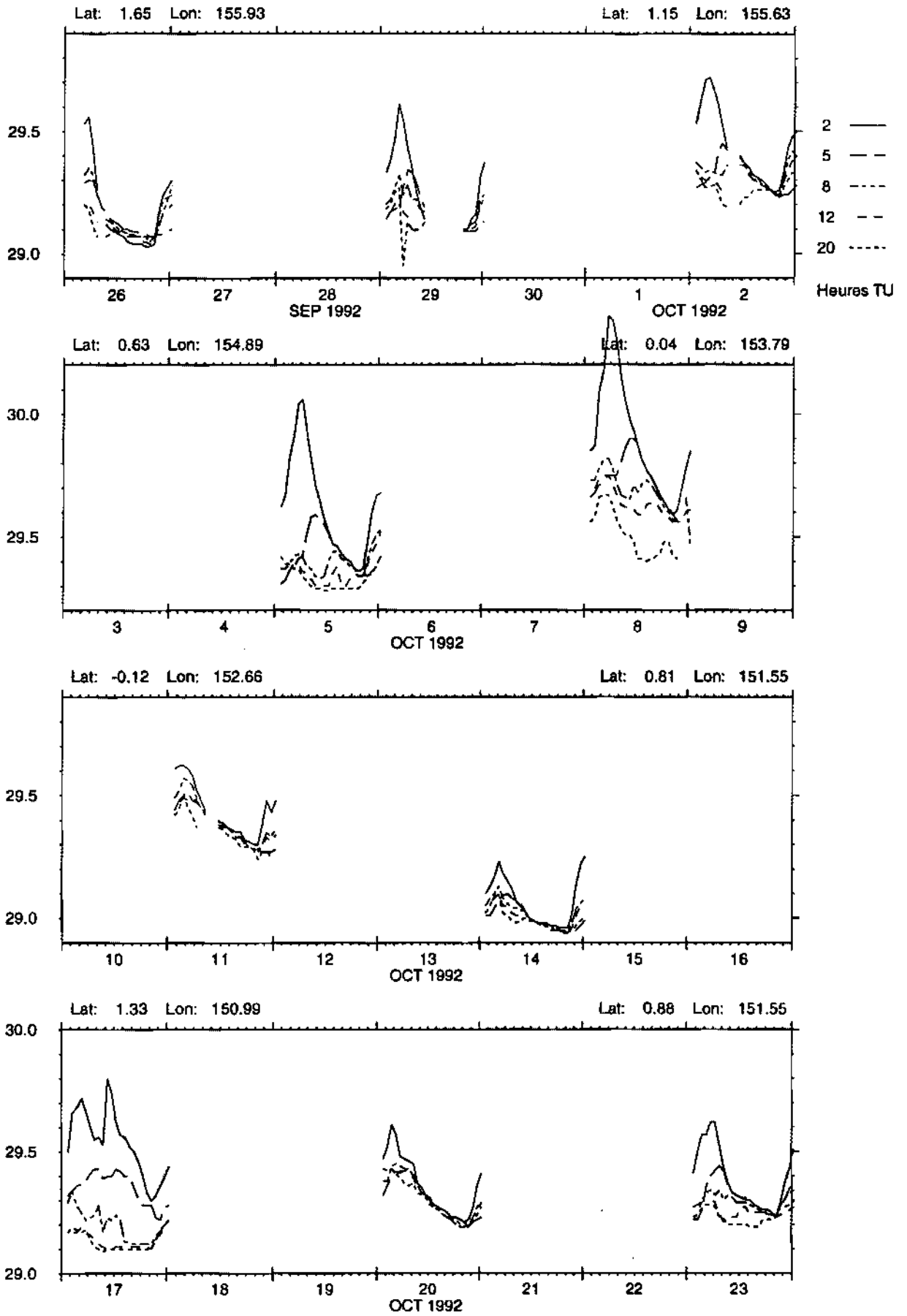
2687



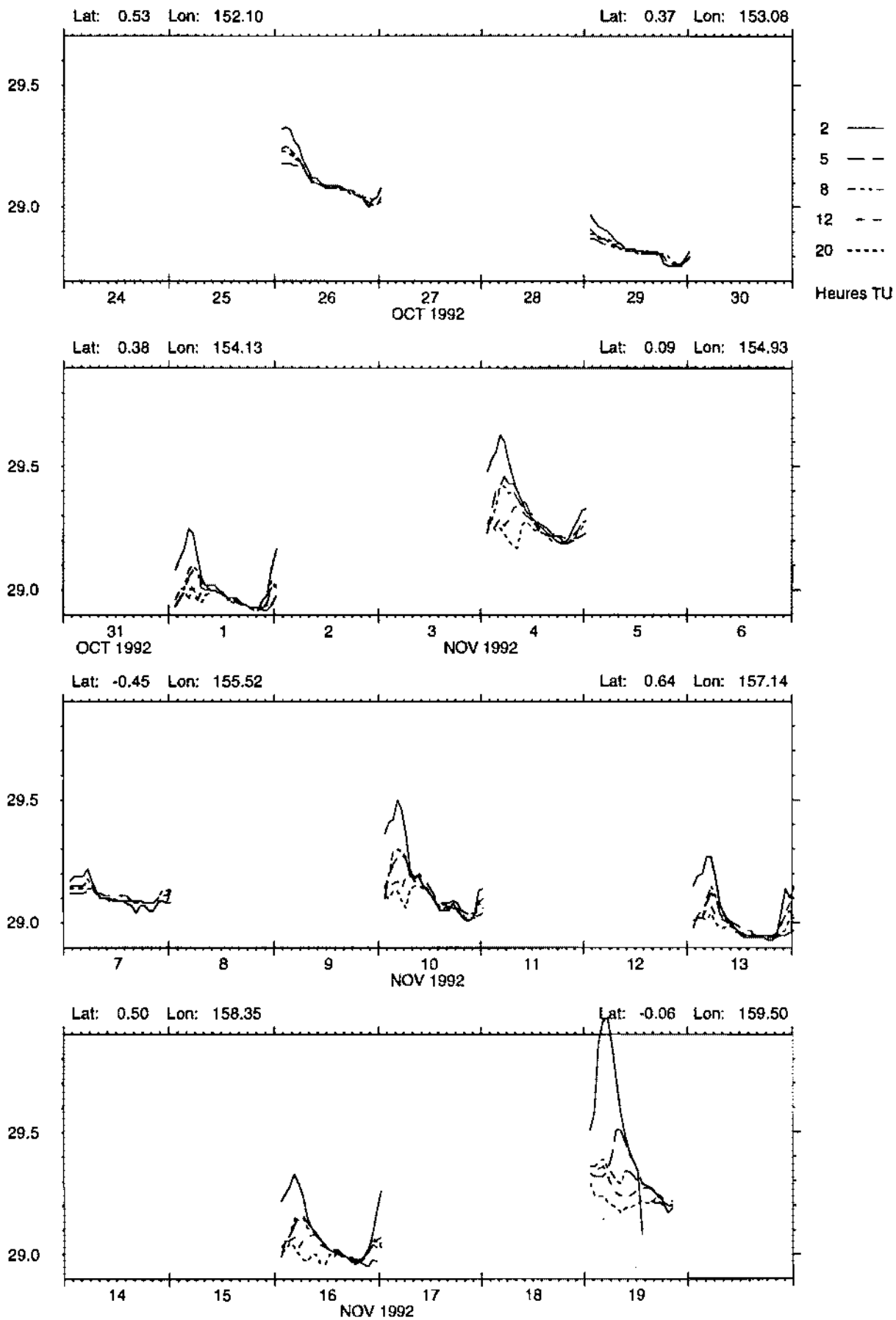
N°2687



02687



02687



Bouée dérivante BODEGA n° 2690

Date début et position : 22/01/93 à 2.96°N, 155.57°E

Launch date and position

Date fin et position : 24/11/93 à 18.85°N, 121.35°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

Proposed corrections to compensate sensor drifts

. cycle 8 (15/02/93) : -0.01 capteur 12m

. cycle 9 (18/02/93) : -0.02 capteur 5m

. cycle 11 (24/02/93) : -0.03 capteur 5m

. cycle 35 (07/05/93) : -0.3 capteur 2m

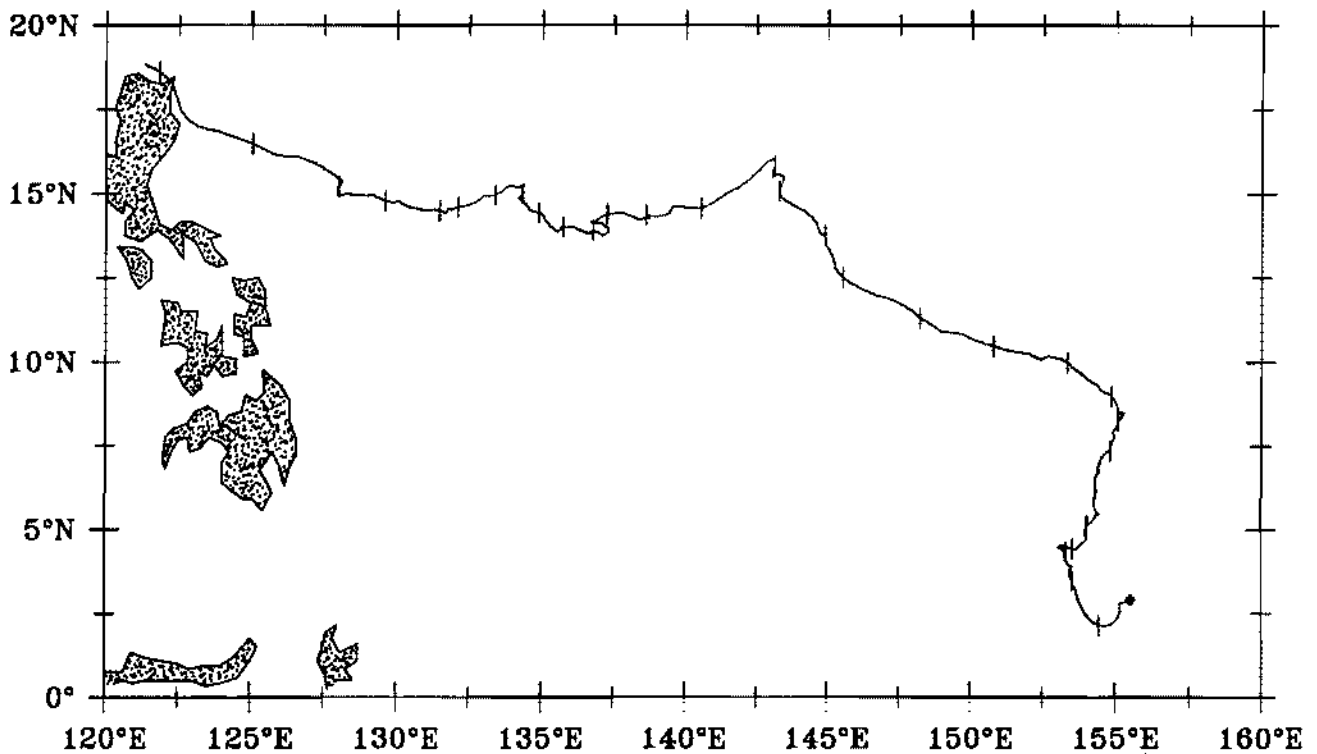
. cycle 43 (31/5/93) : -0.5 capteur 2m

. cycle 83 (28/09/93) : -0.03 capteur 5m

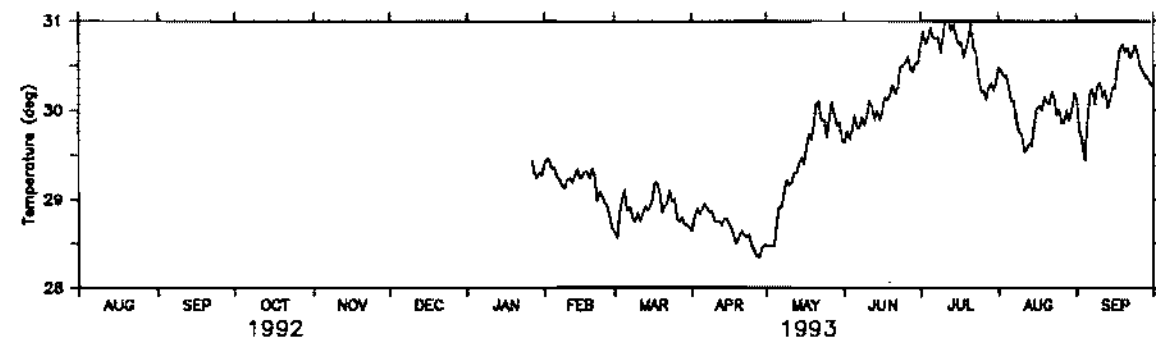
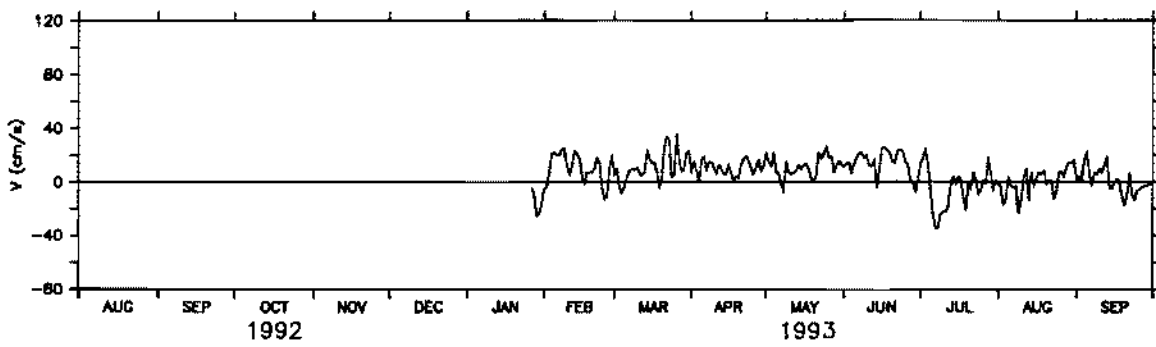
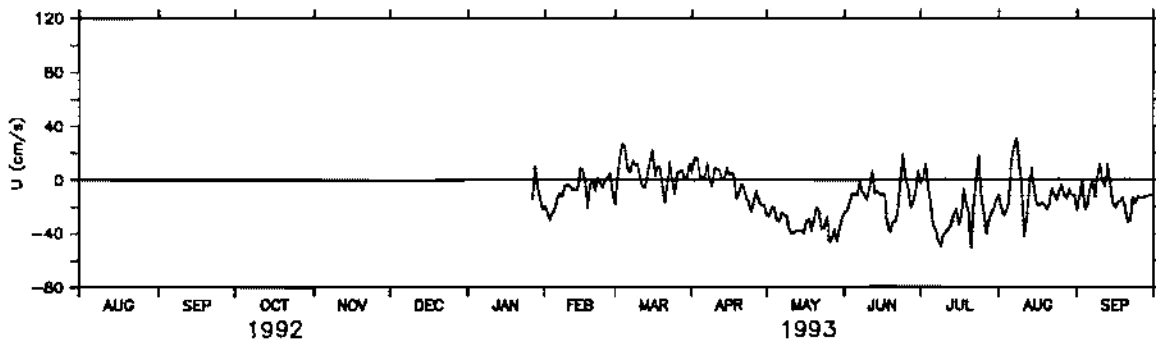
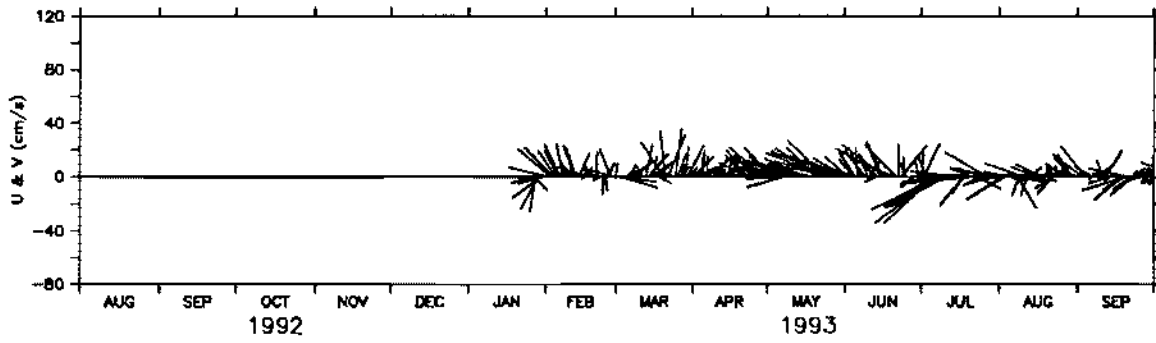
Le capteur 12m est déficient à partir du 1 mai 1993 et a été supprimé à partir de cette date. De même pour le capteur 8m à partir du 6 juin 1993.

Temperature sensor at 12m failed after May 1, 1993 and has been removed in the figures (as for 8m sensor after June 6, 1993).

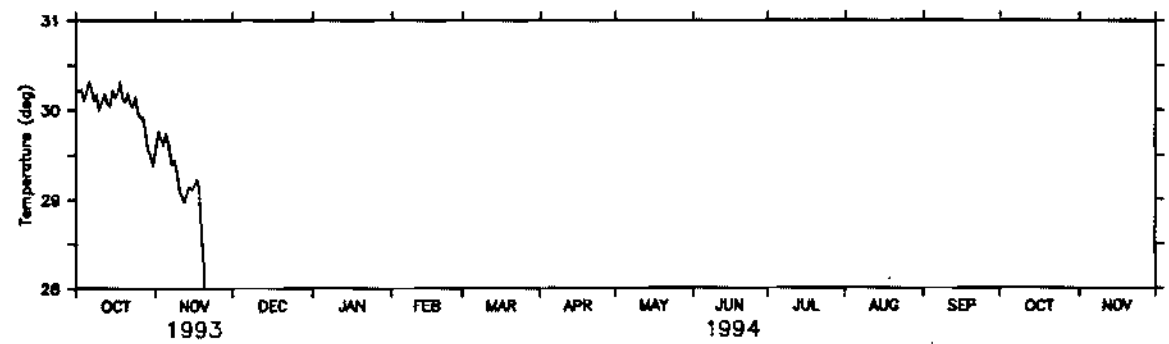
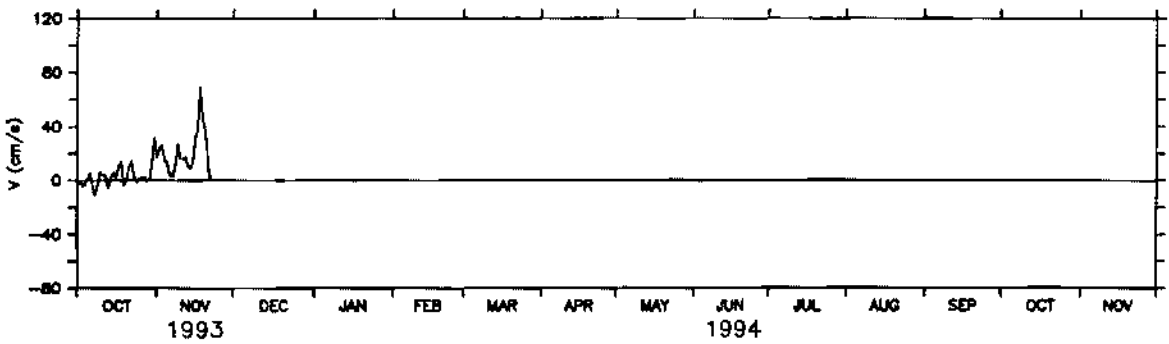
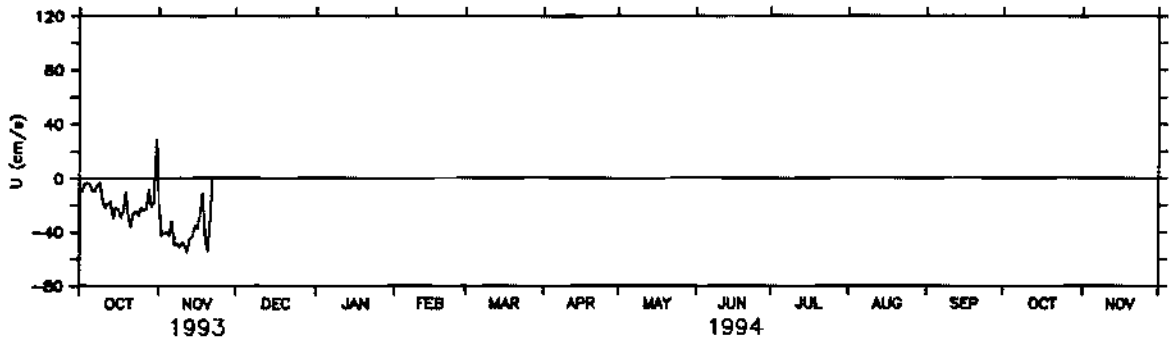
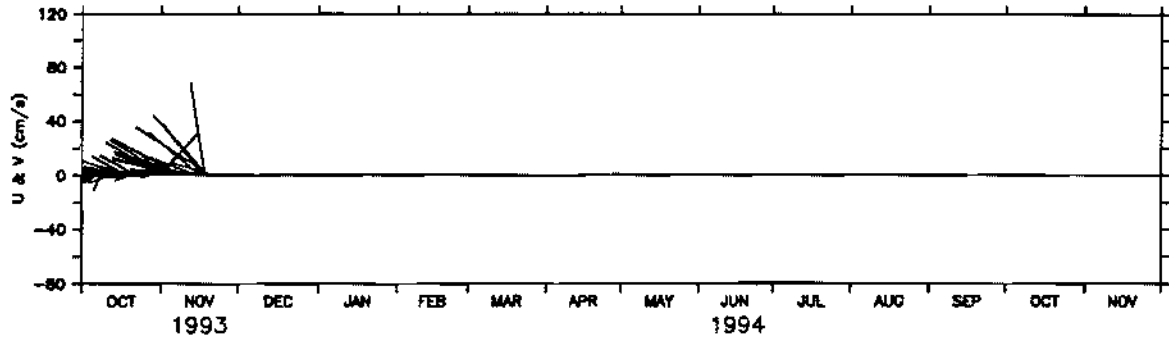
2690



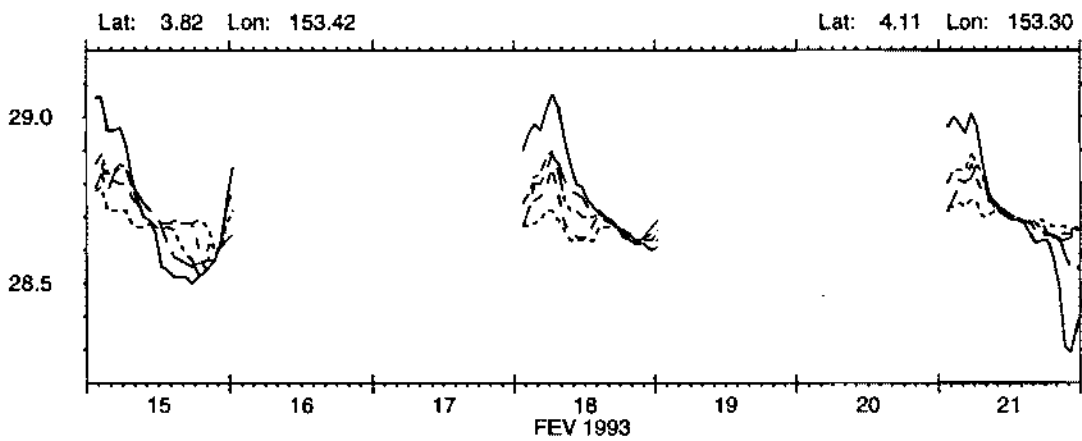
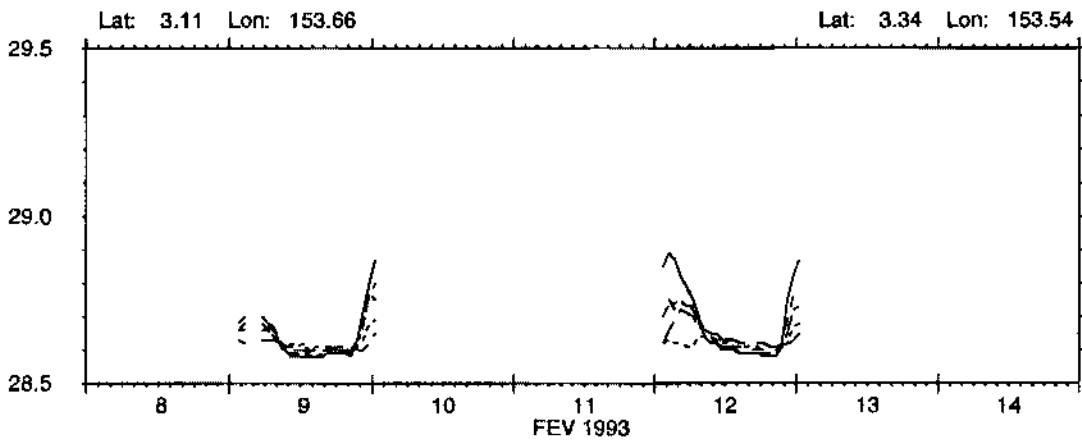
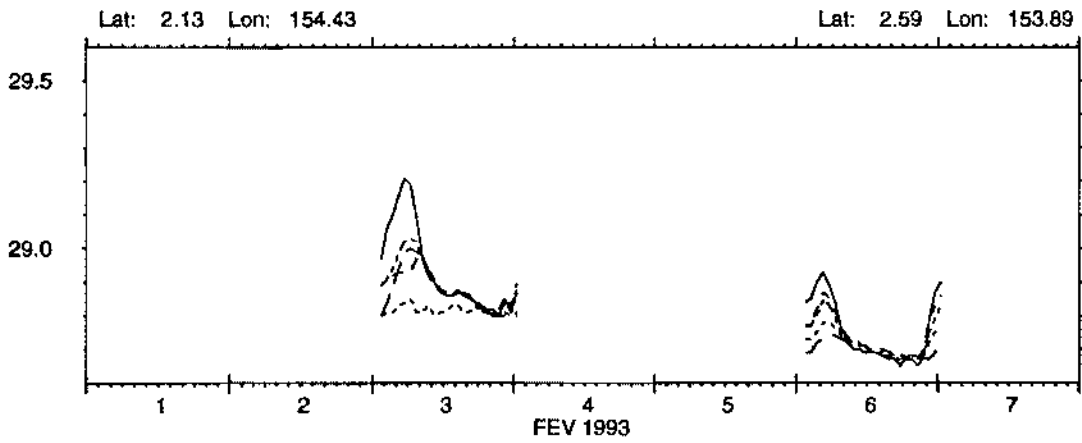
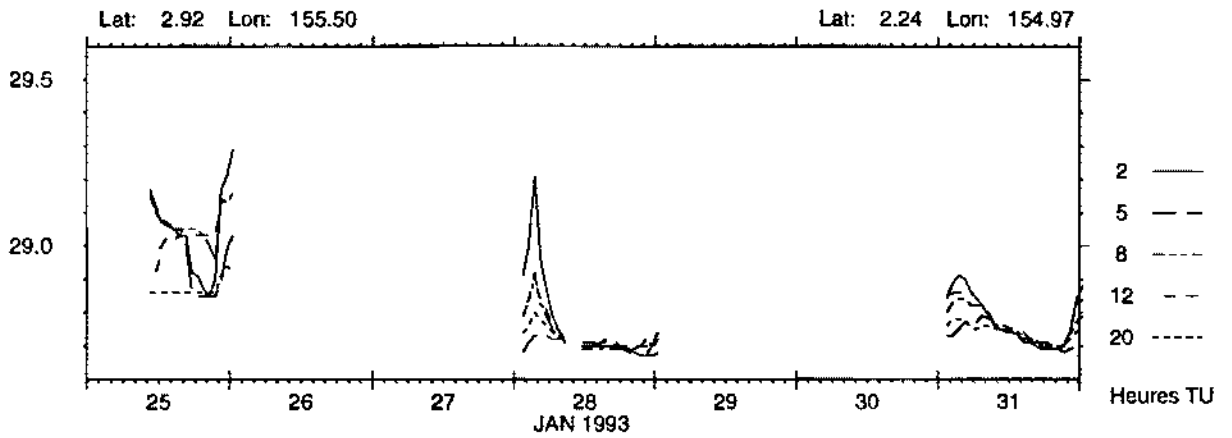
N°2690



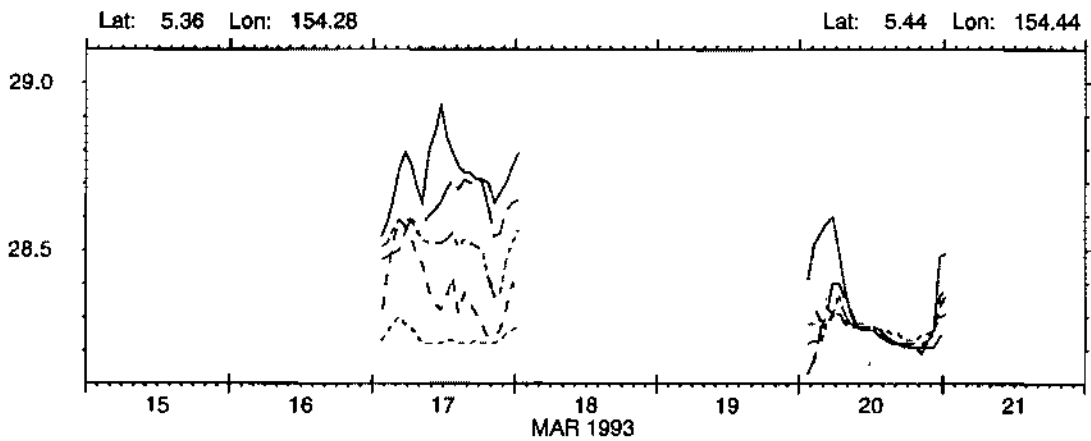
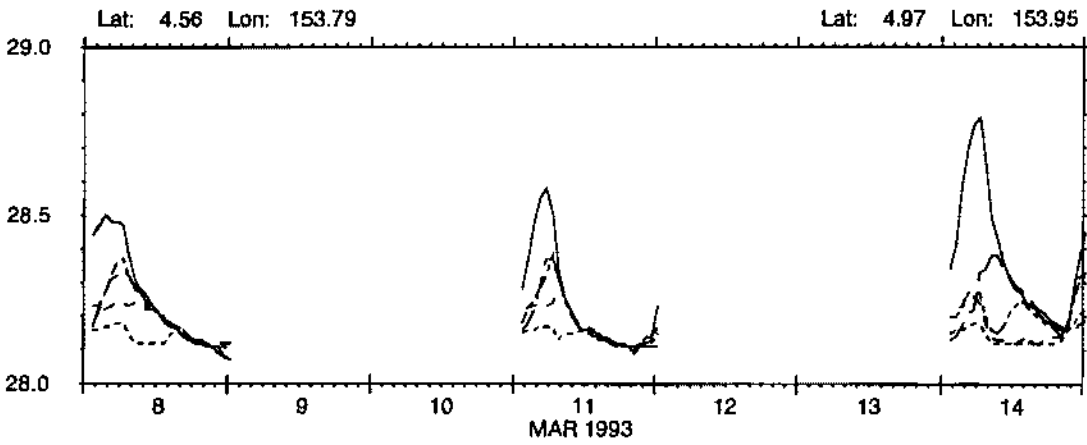
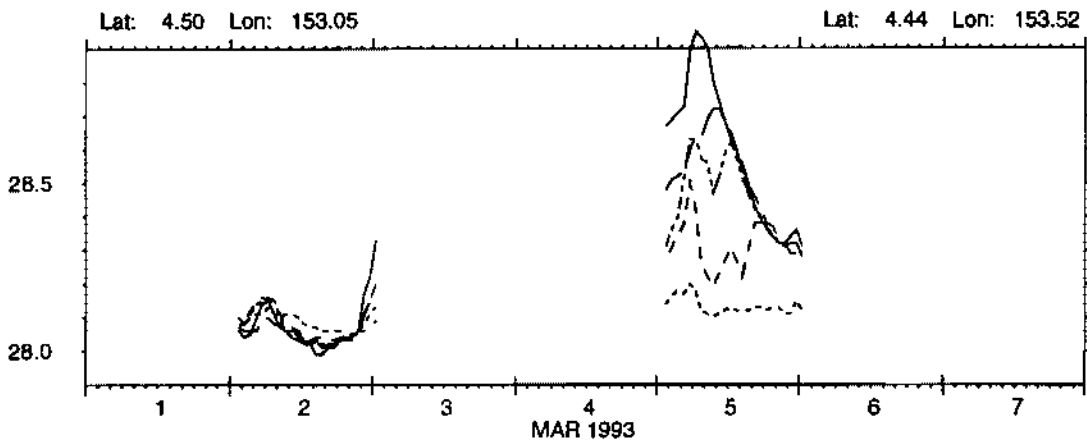
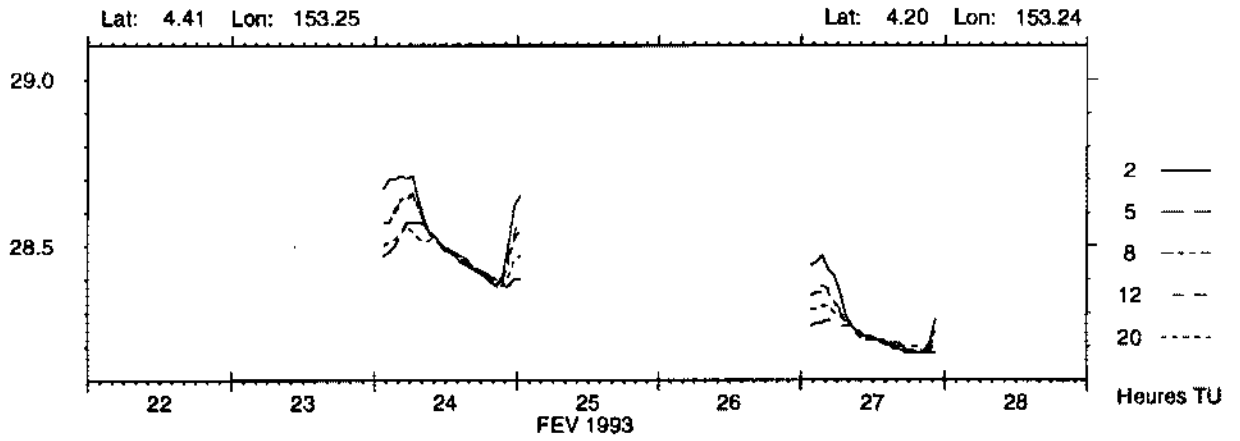
N°2690



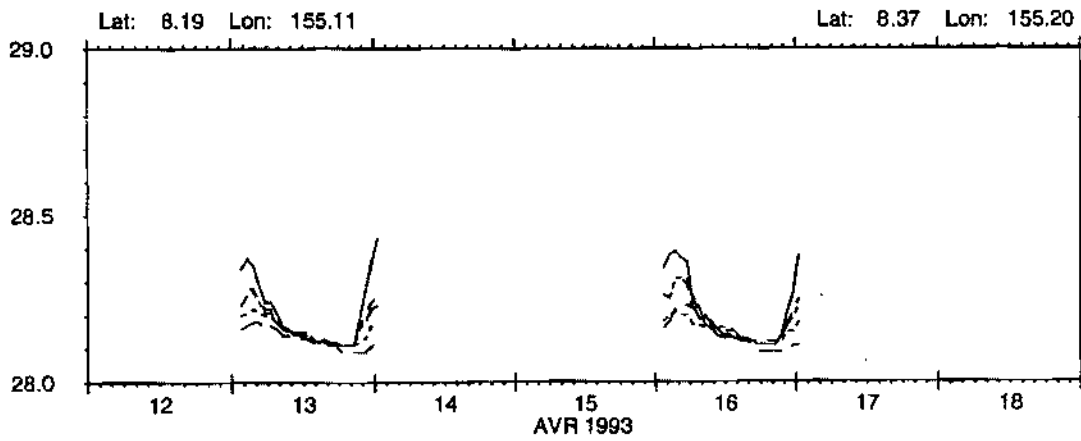
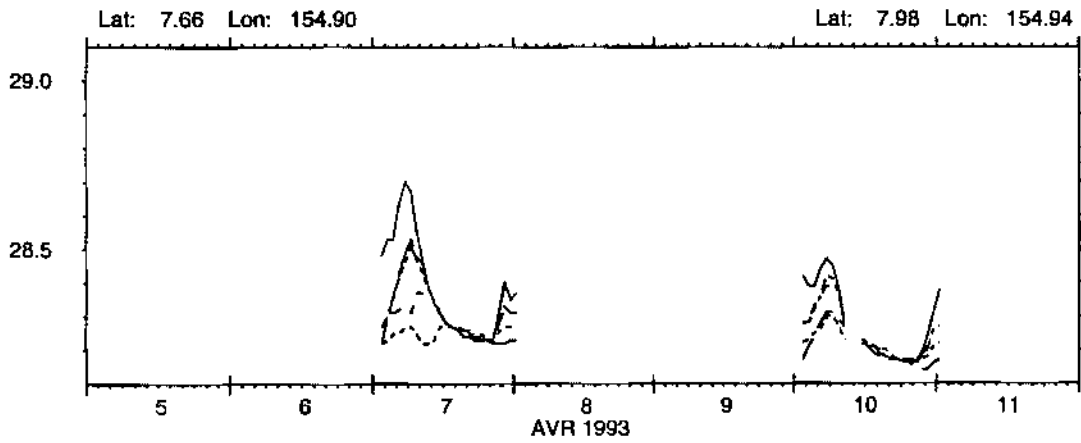
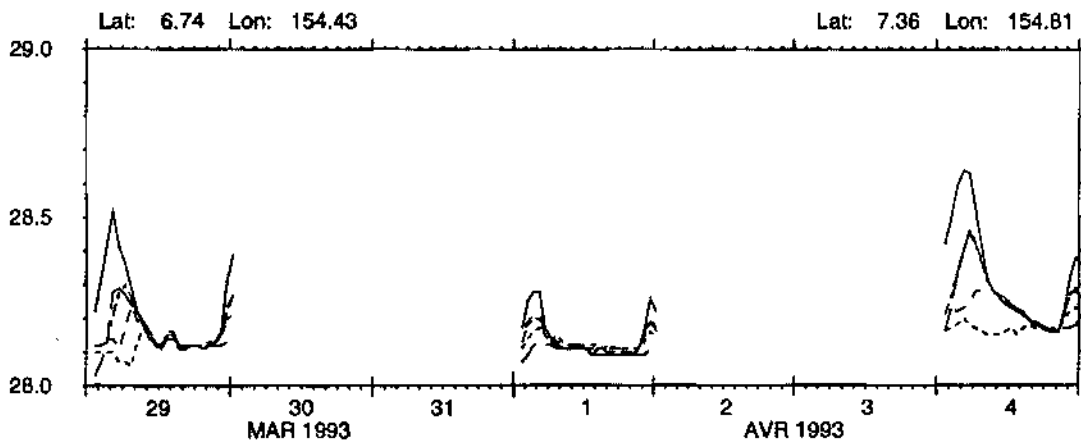
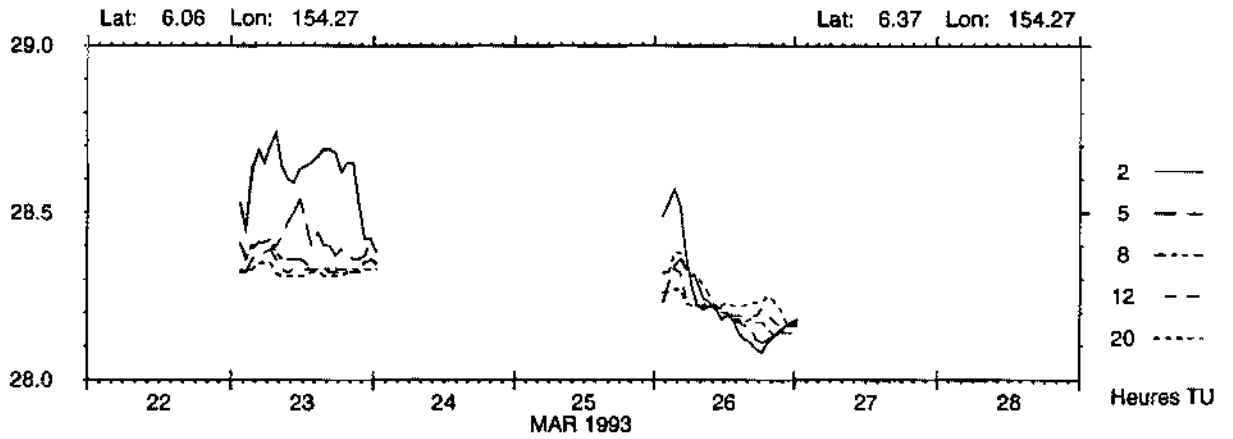
02690



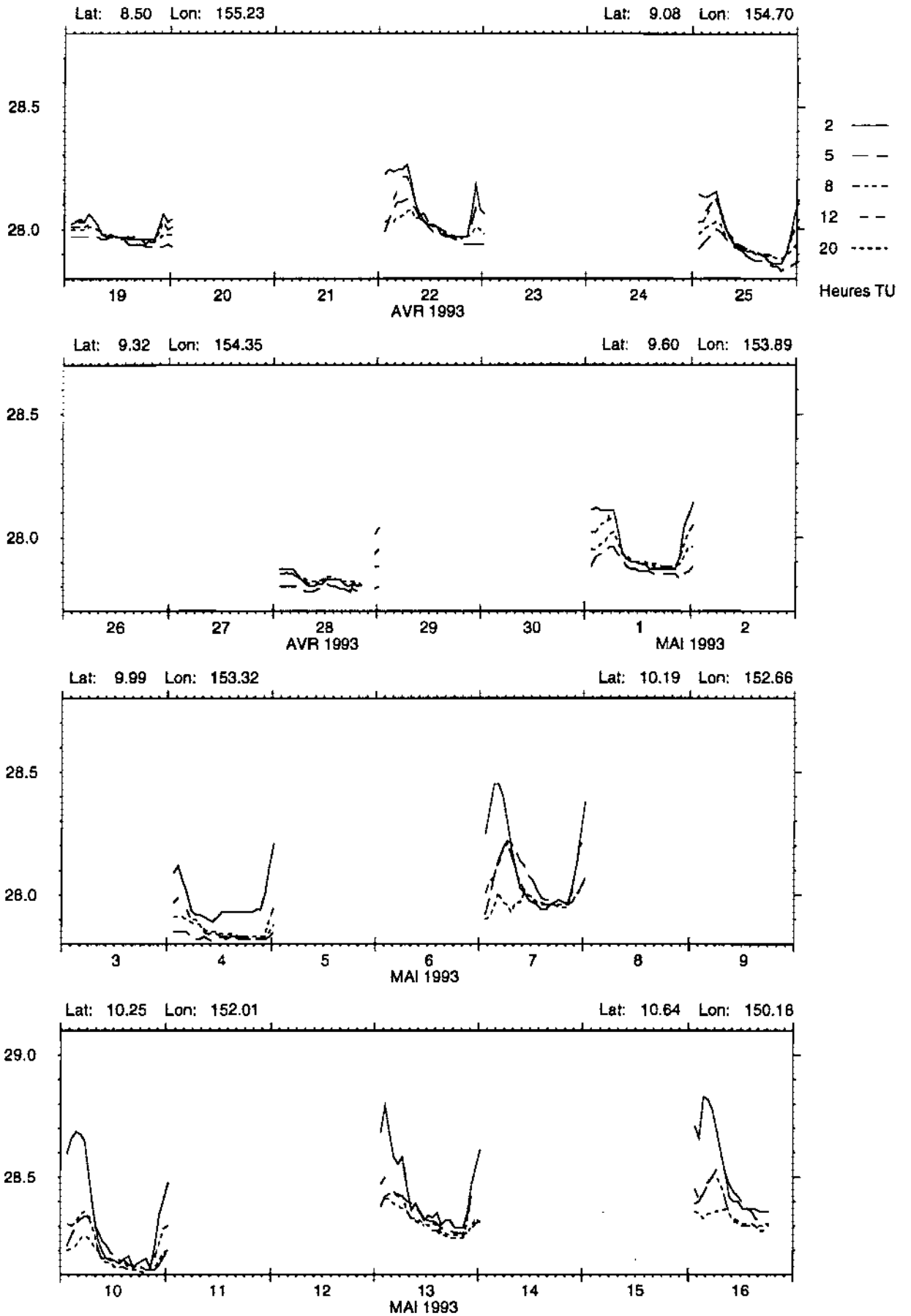
02690



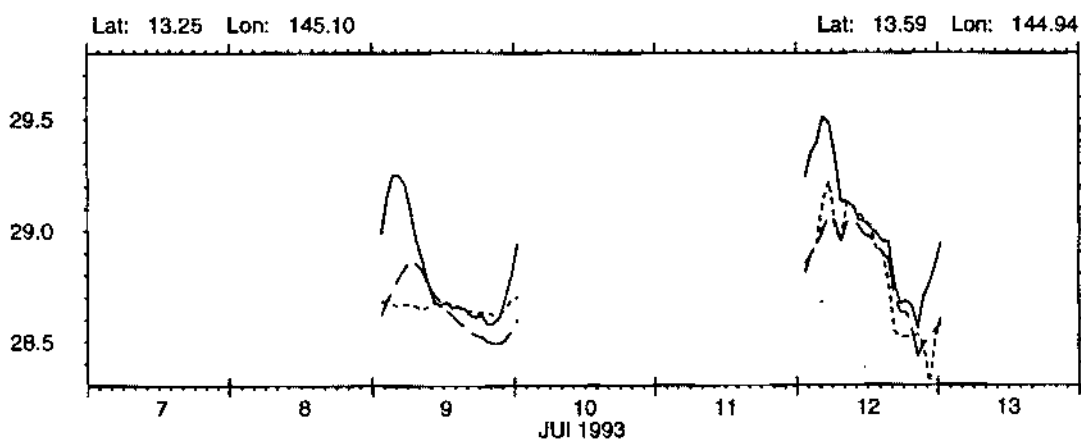
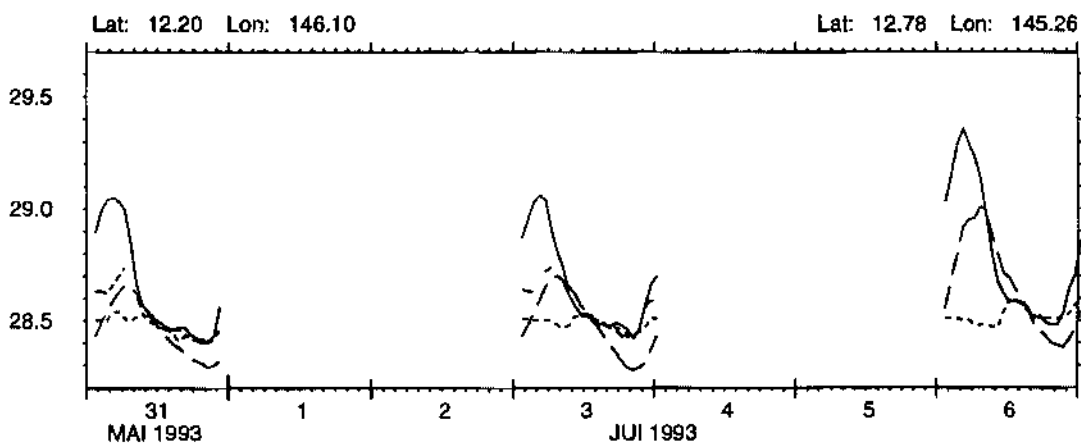
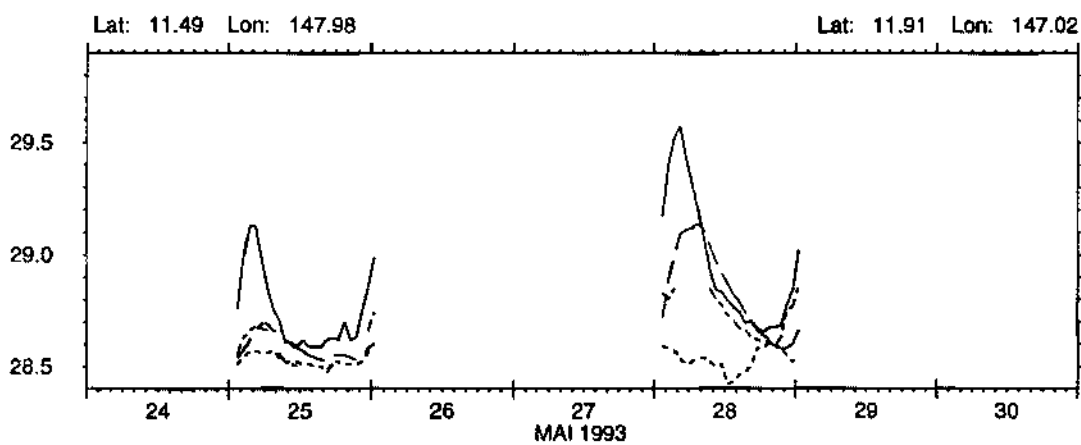
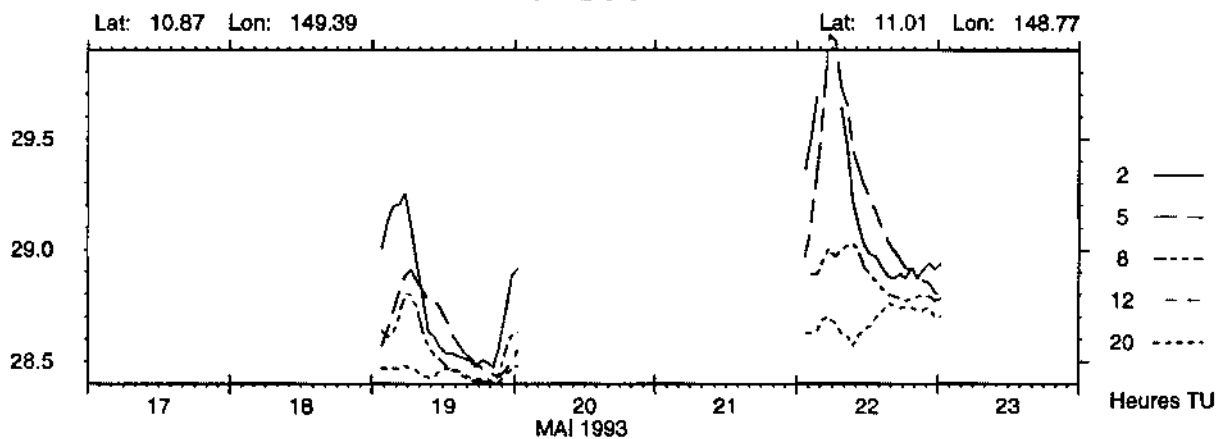
02690



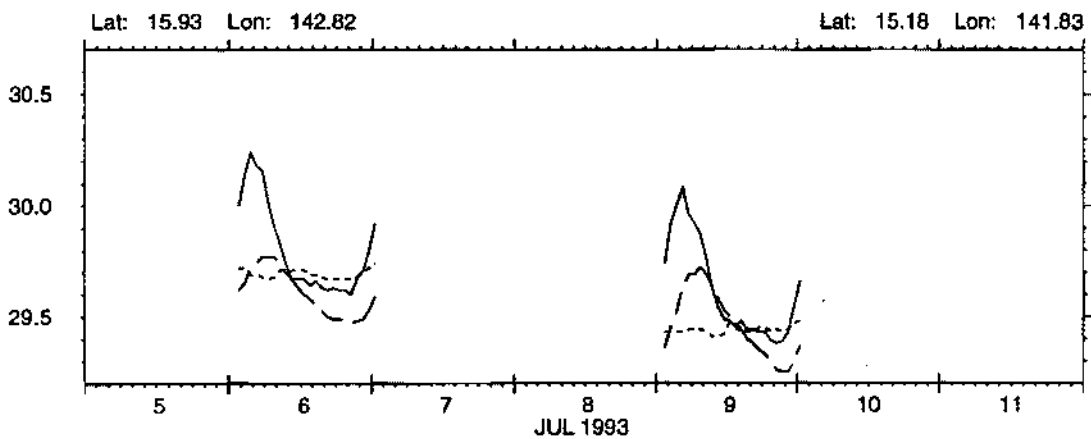
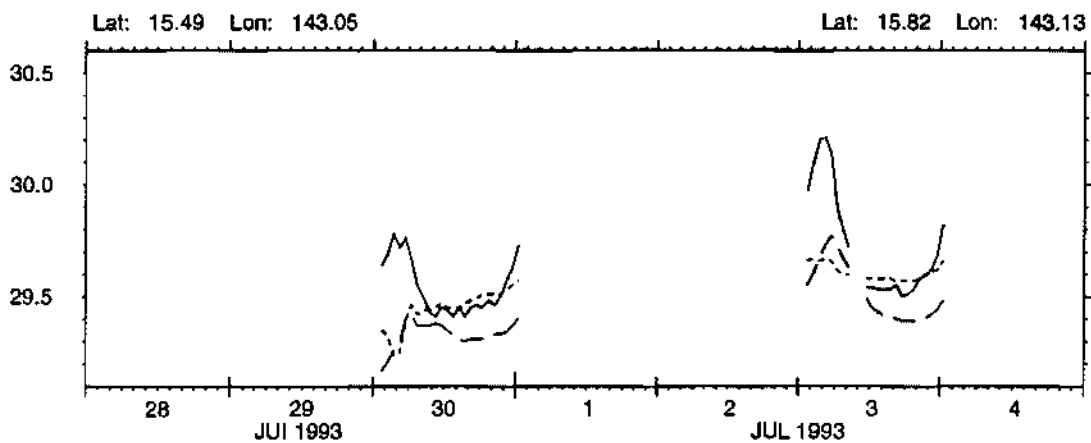
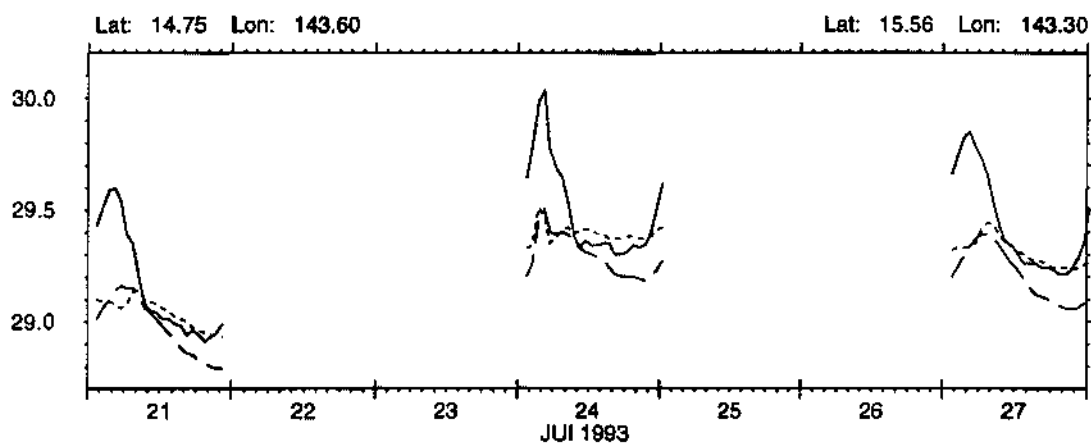
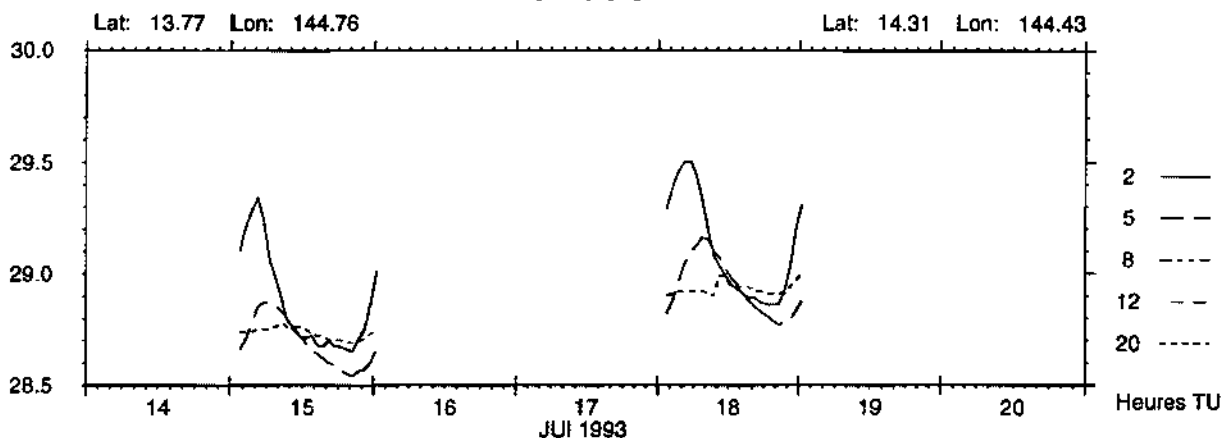
02690



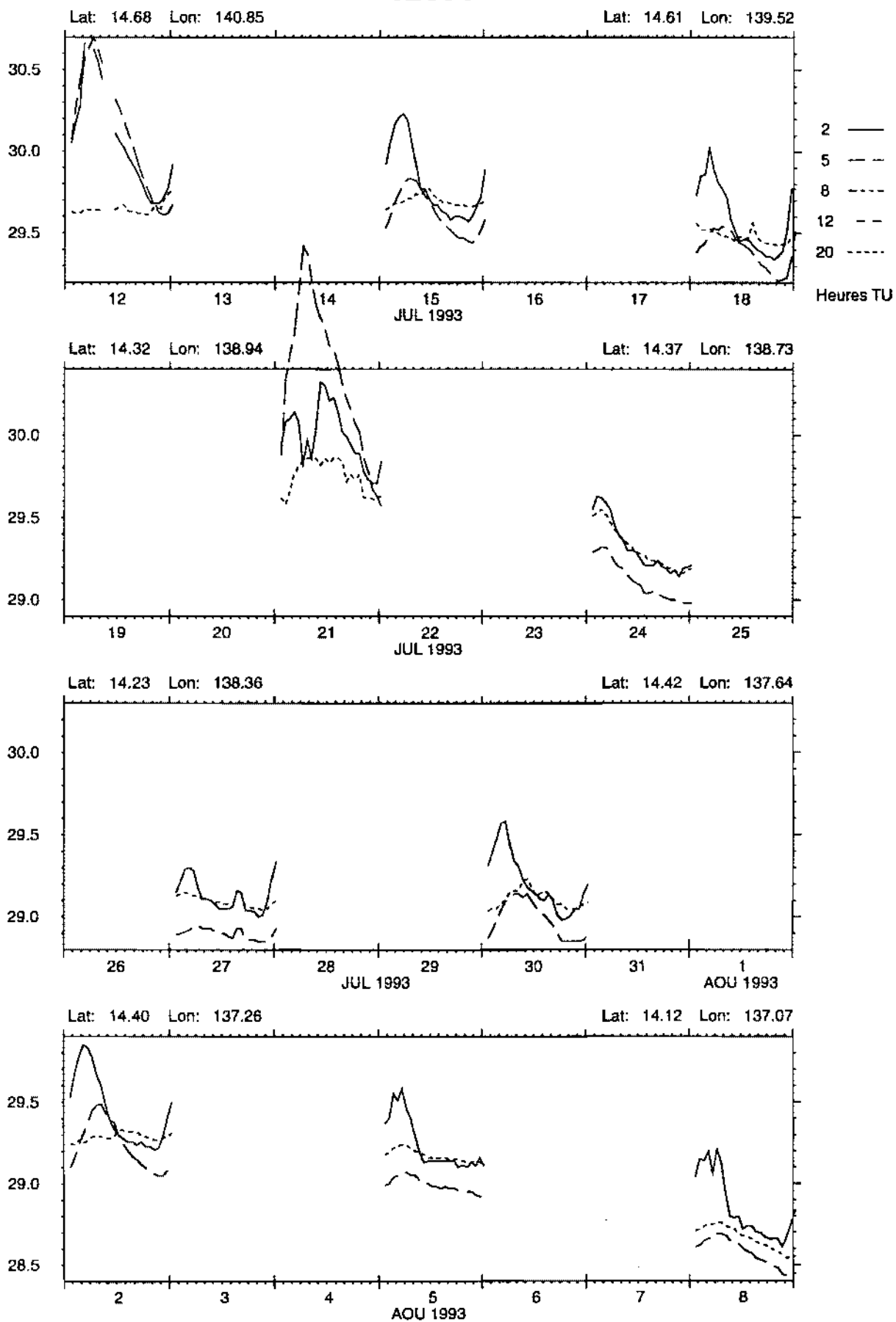
02690



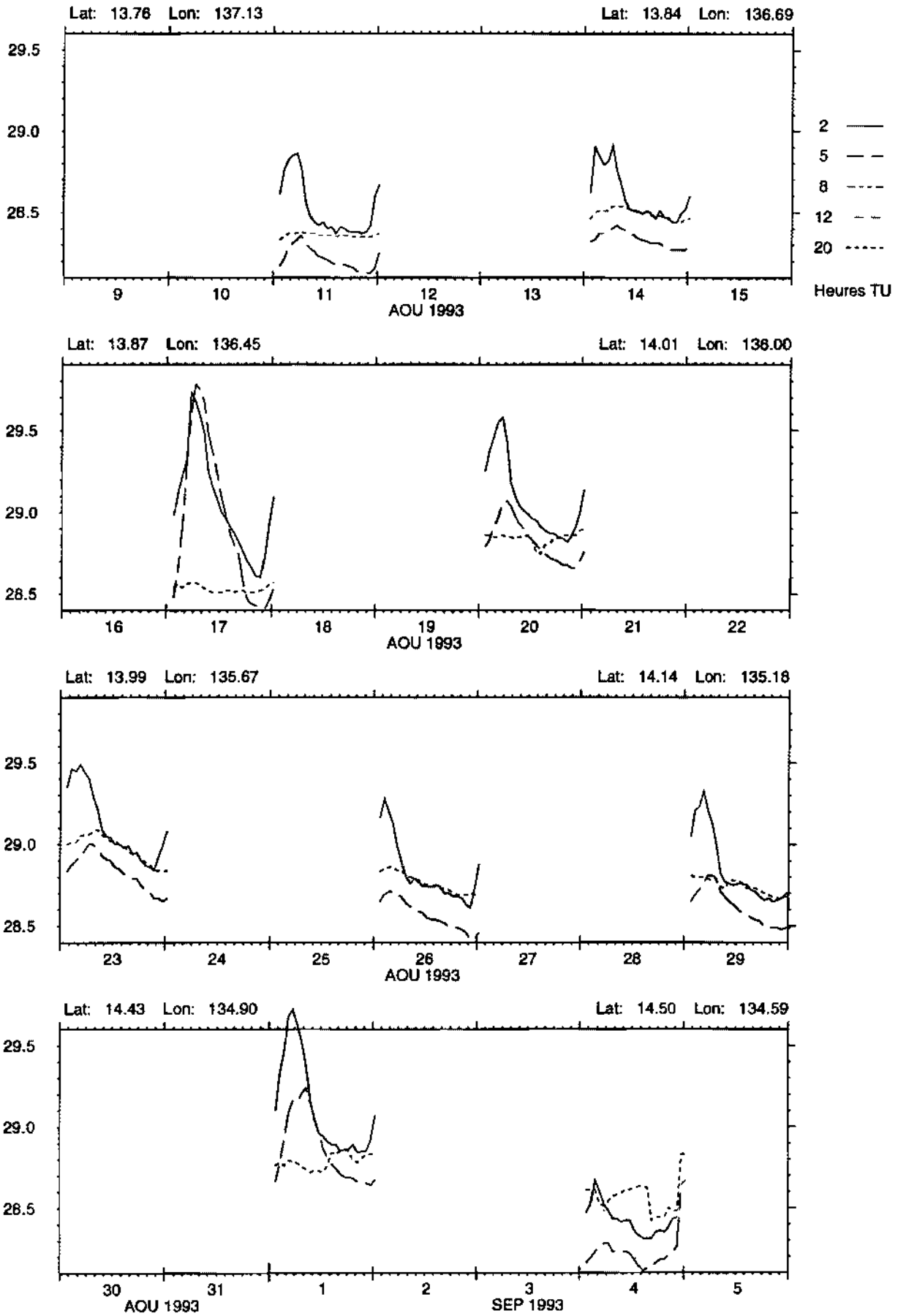
02690



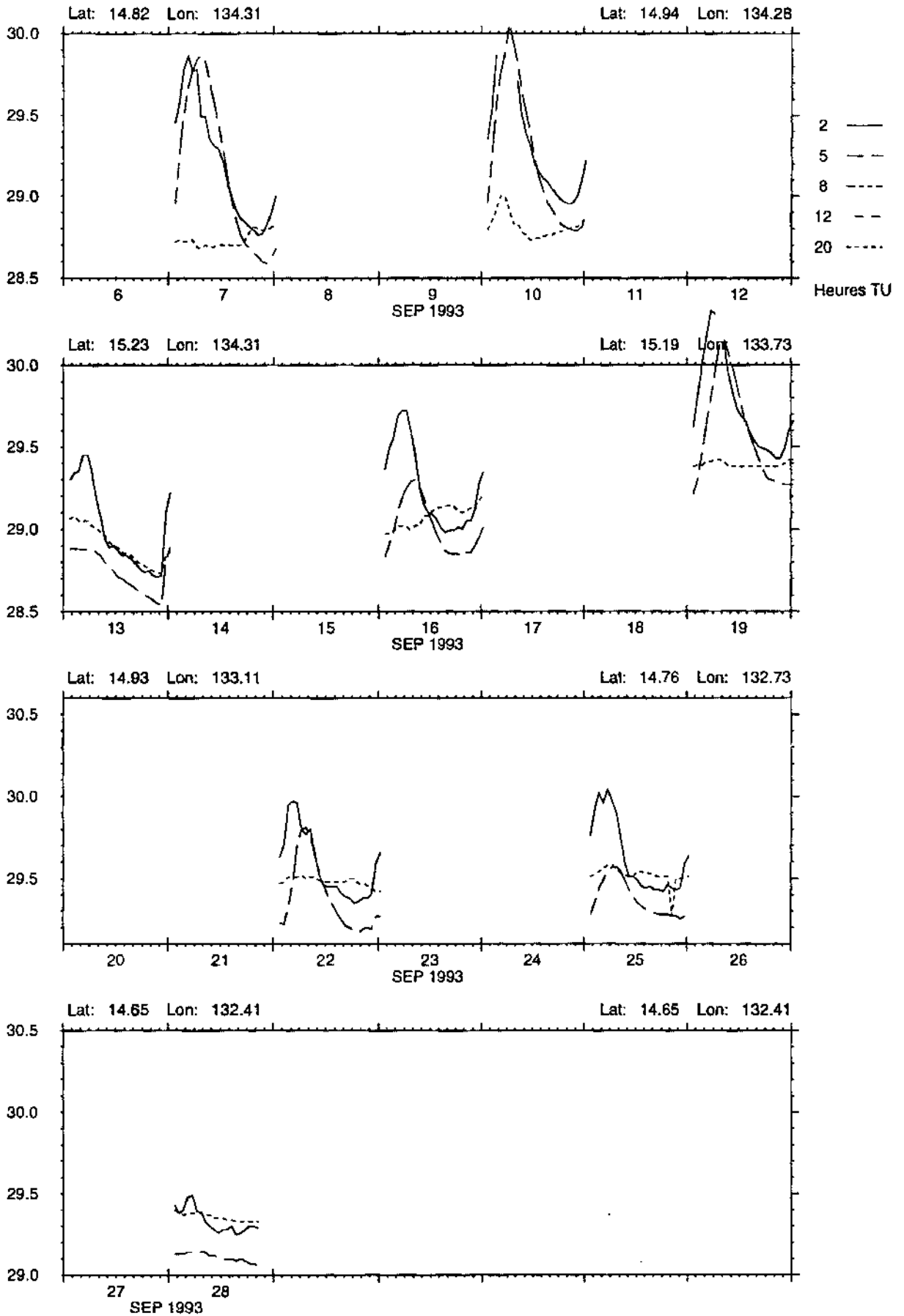
02690



02690



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Bouée dérivante BODEGA n° 17618

Date début et position : 19/12/1992 à 0.04°N, 156.14°E

Launch date and position

Date fin et position : : 19/06/1993 à 1.43°S, 171.65°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

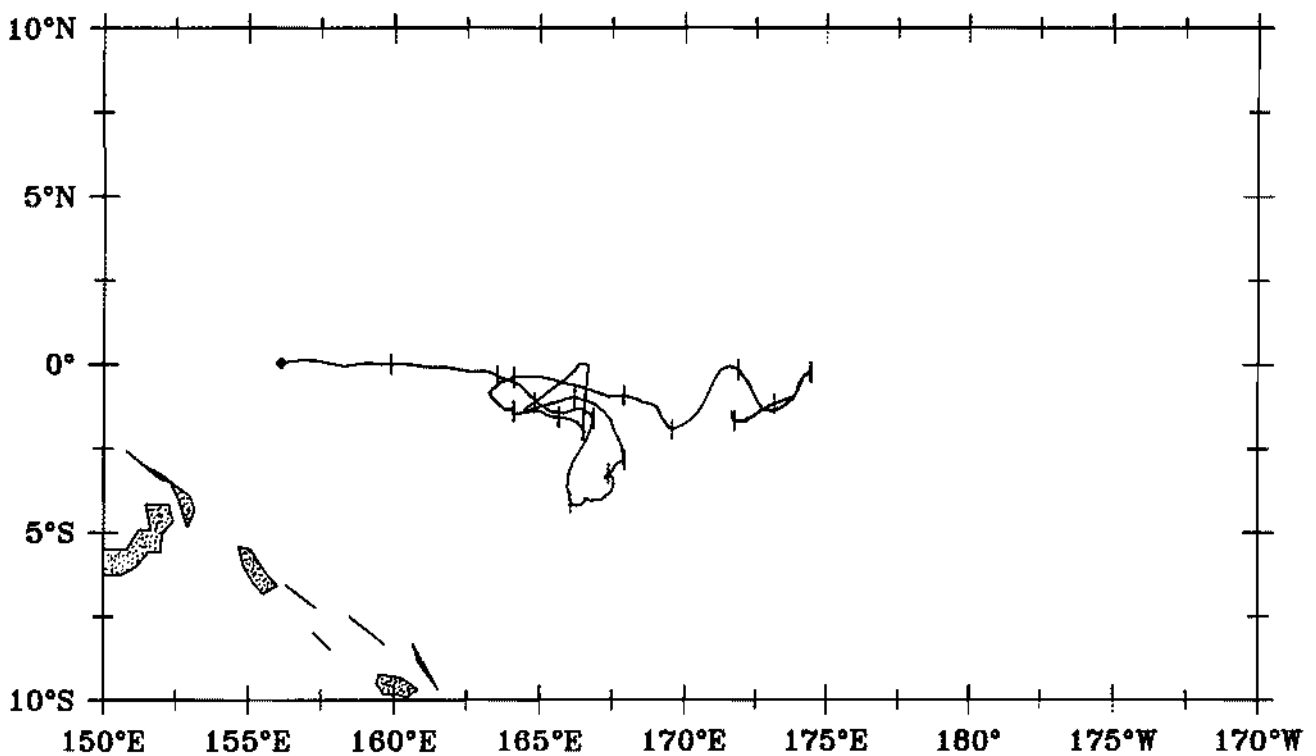
Proposed corrections to compensate sensor drifts

. cycle 92 (23/05/93) : -0.07 capteur 8m
-0.04 capteur 12m

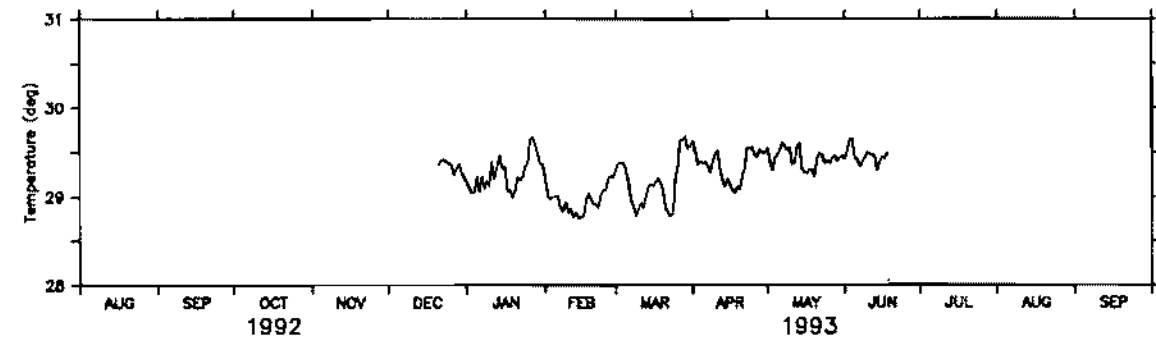
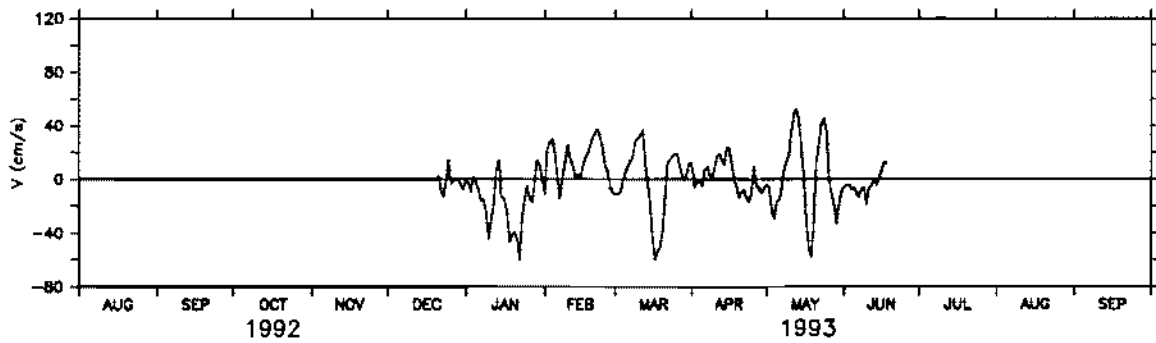
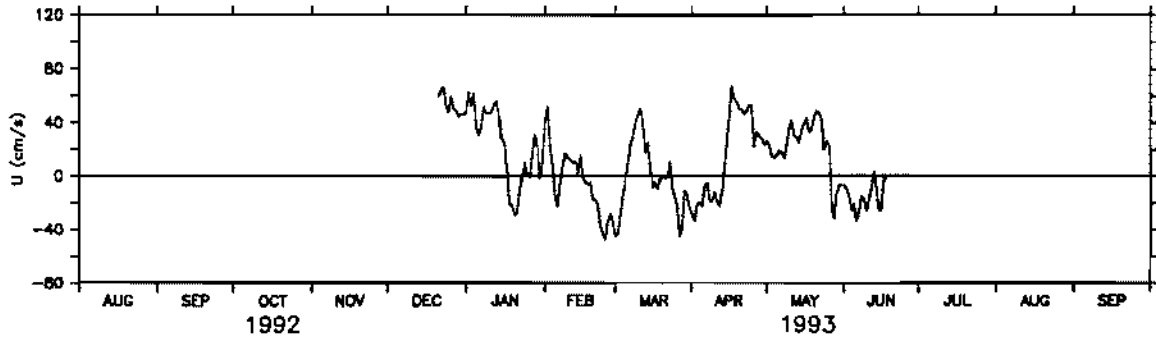
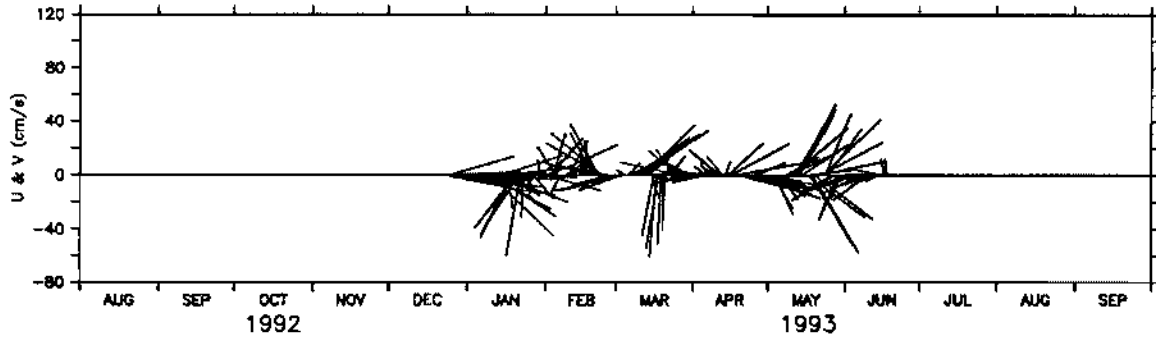
. cycle 94 (29/05/93) : +0.01 capteur 5m

. cycle 101 (19/06/93) : +0.04 capteur 5m

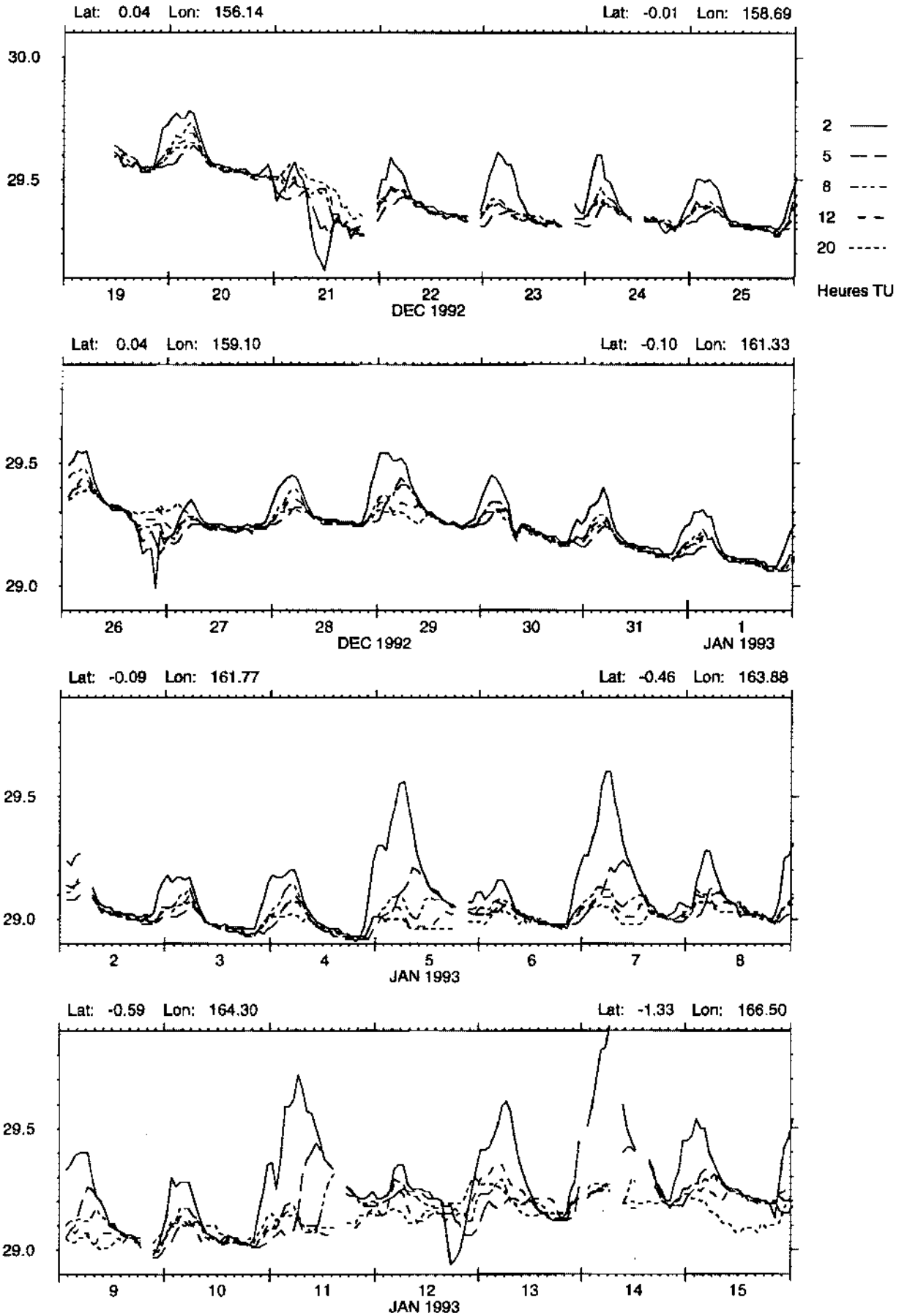
17618



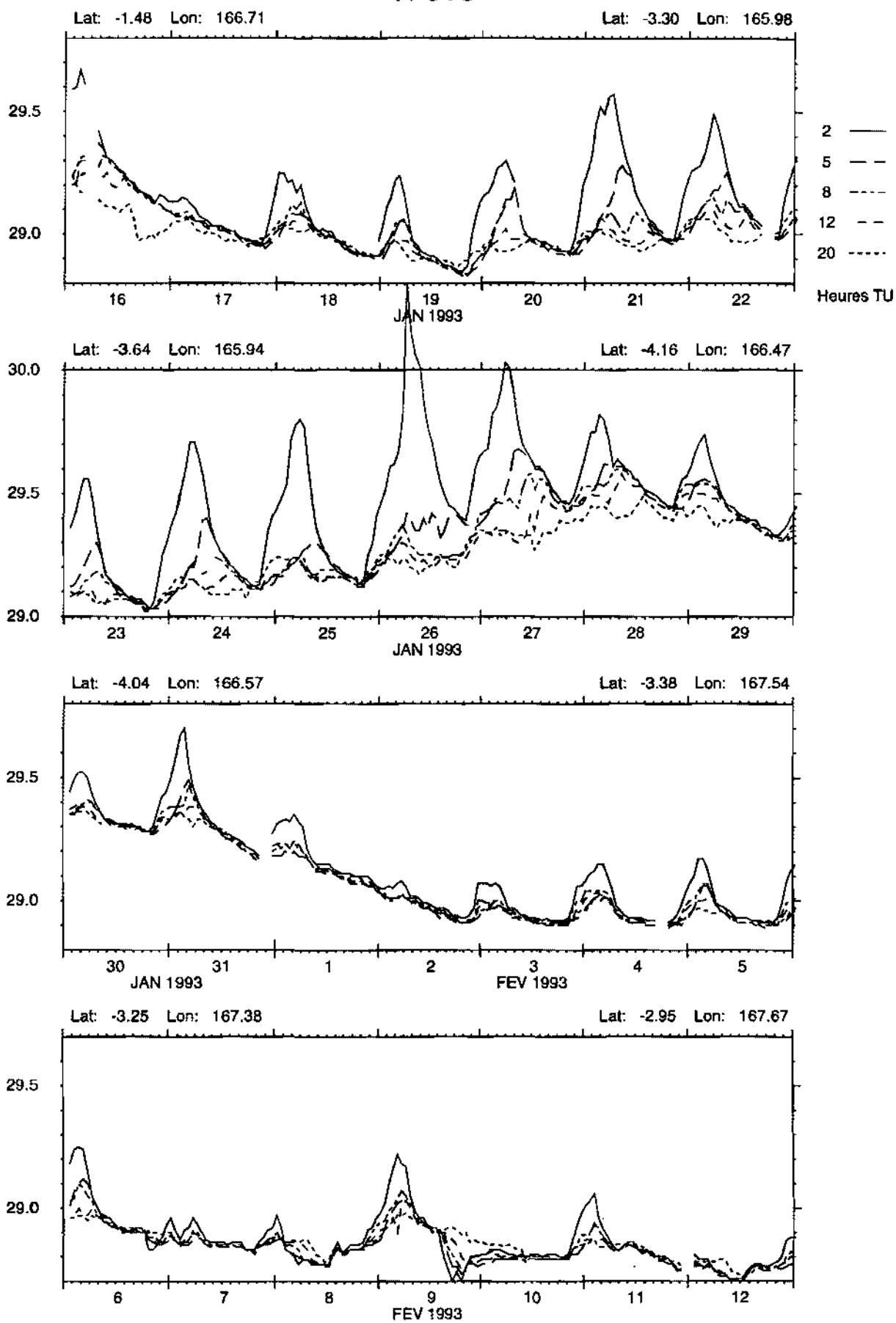
N°17618



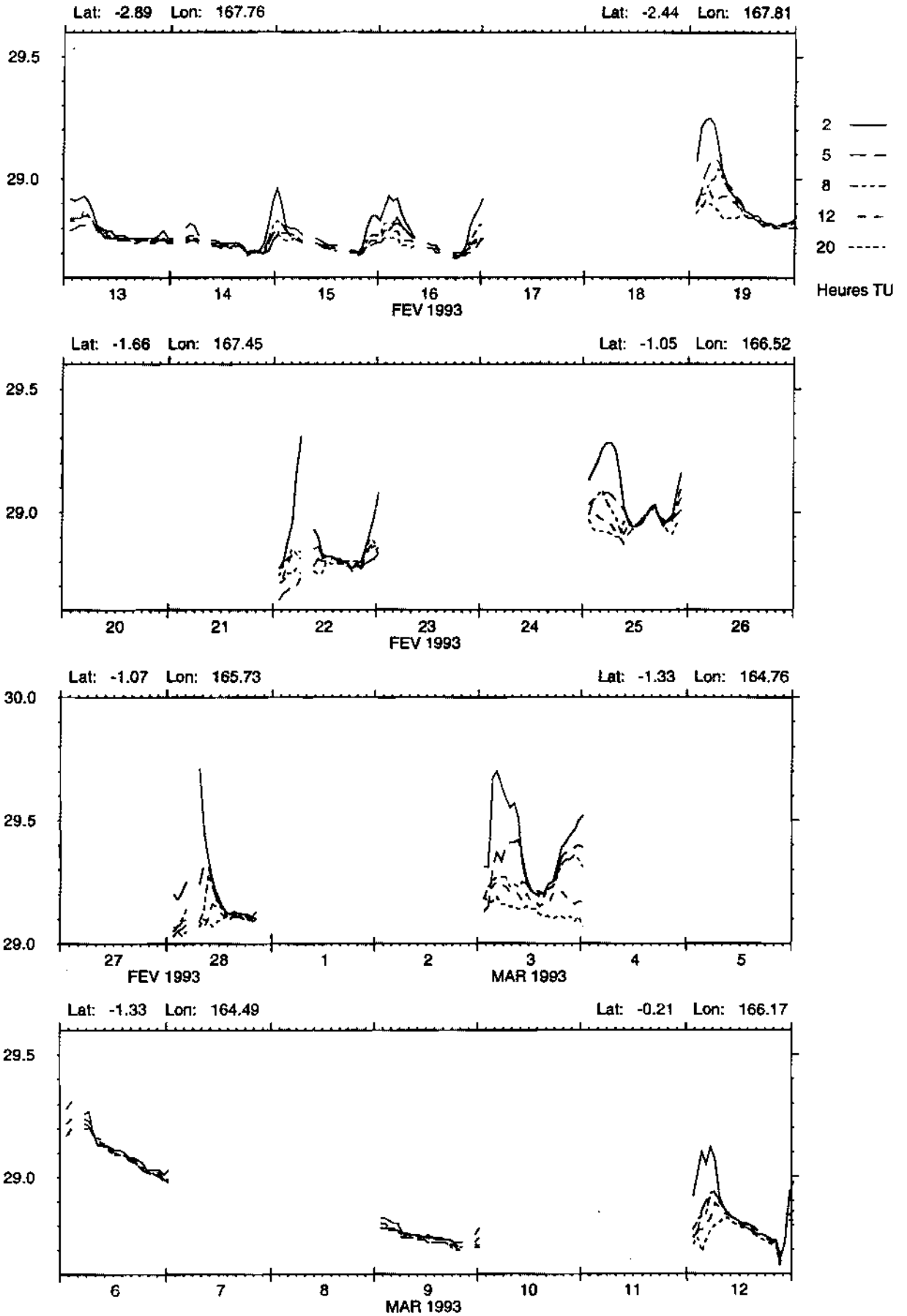
17618



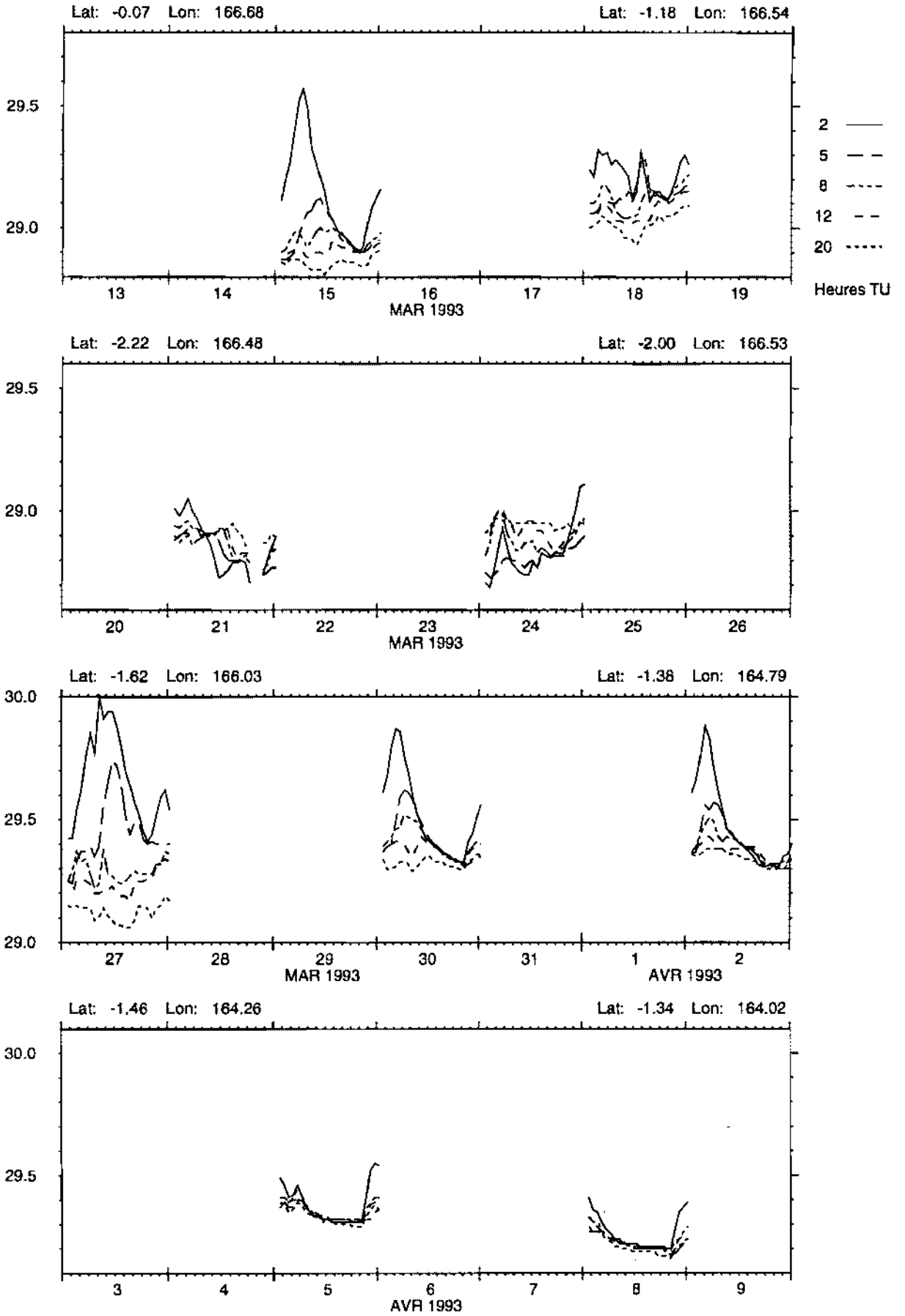
17618



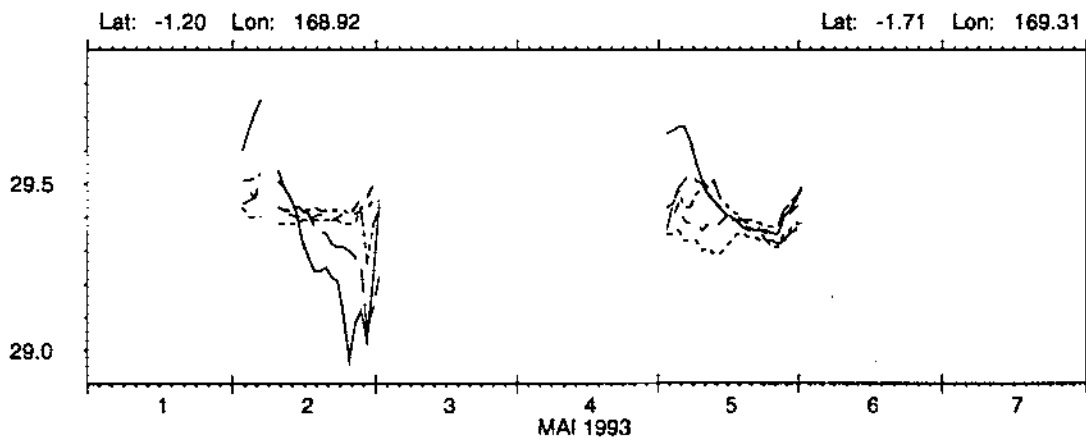
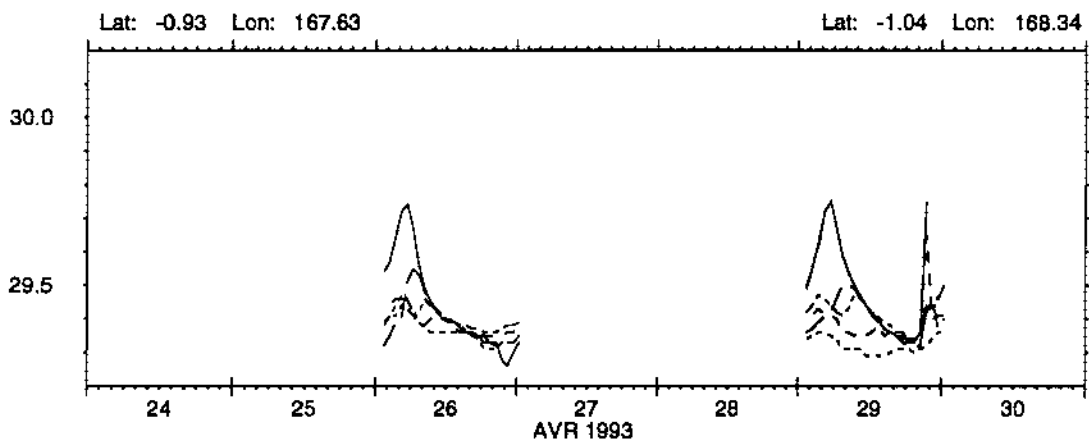
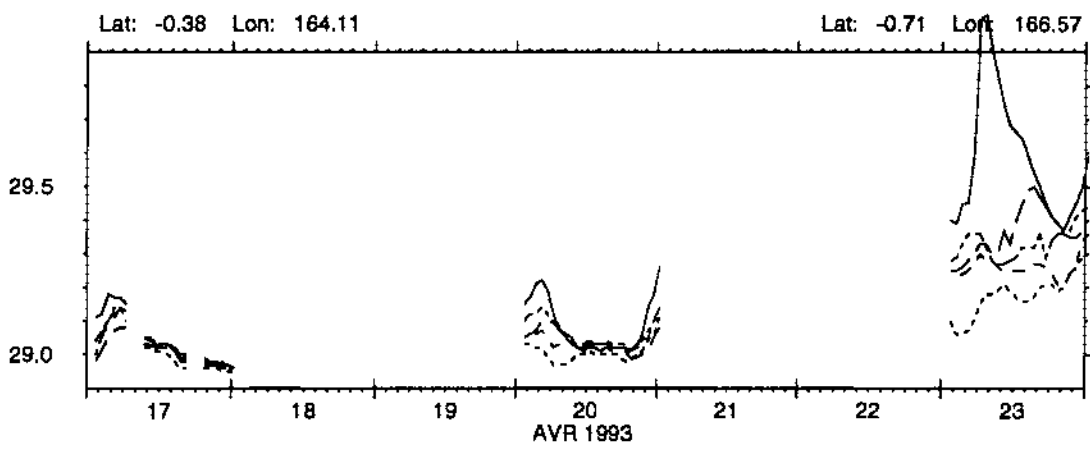
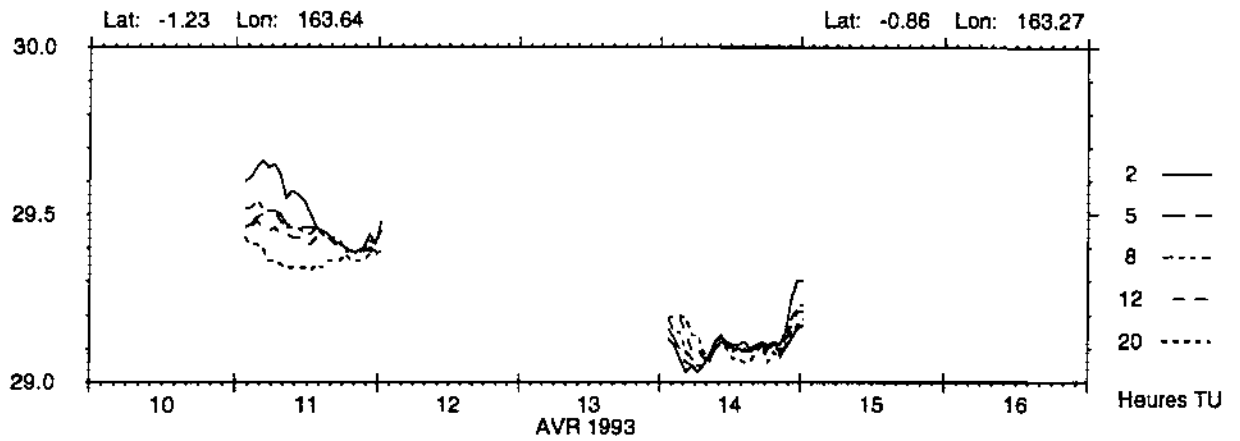
17618



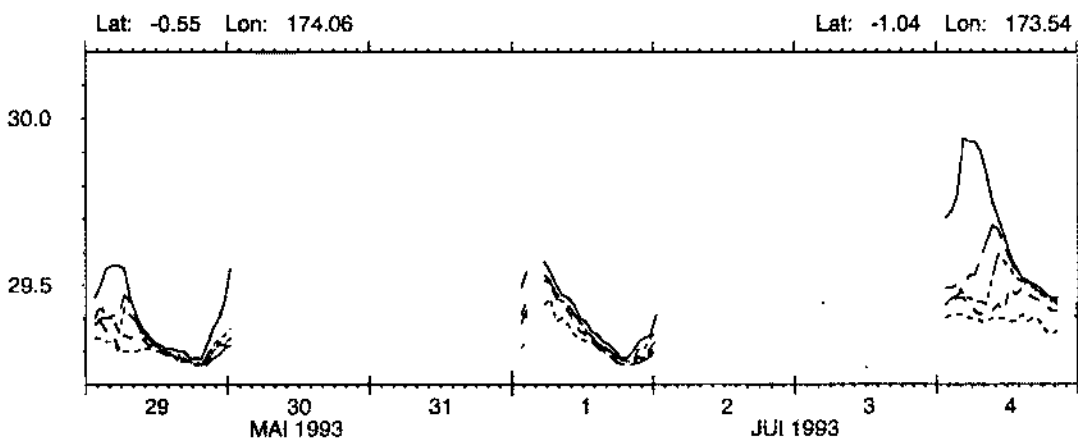
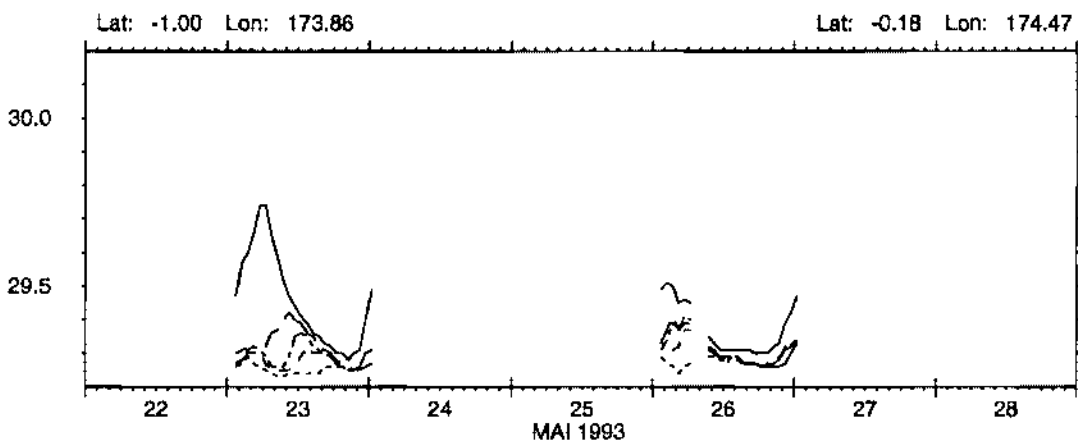
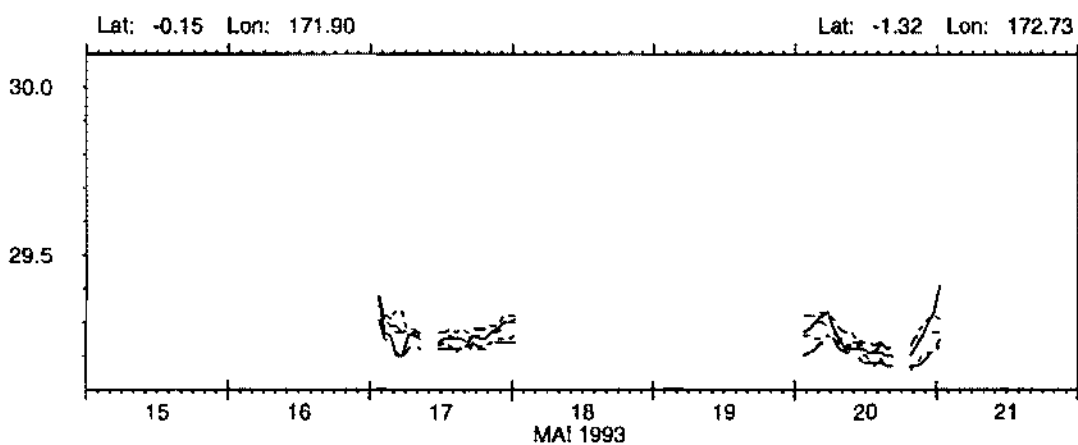
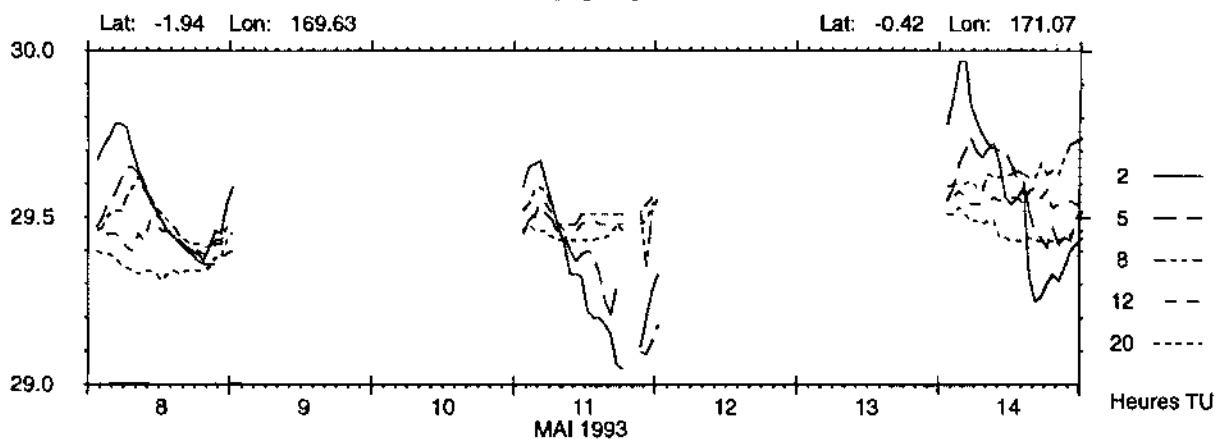
17618



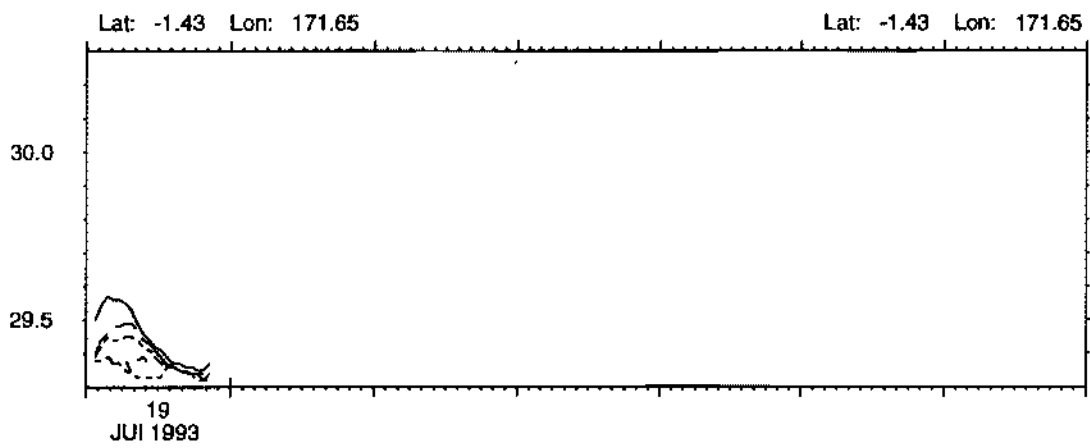
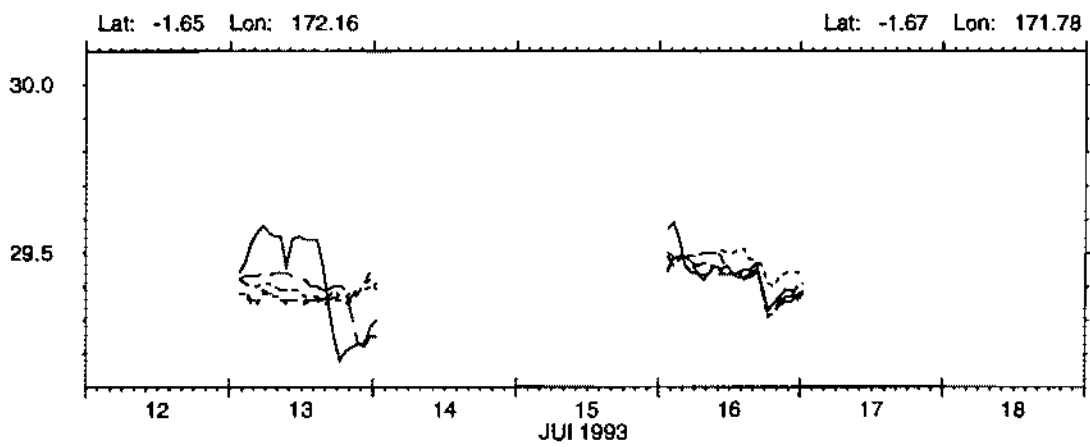
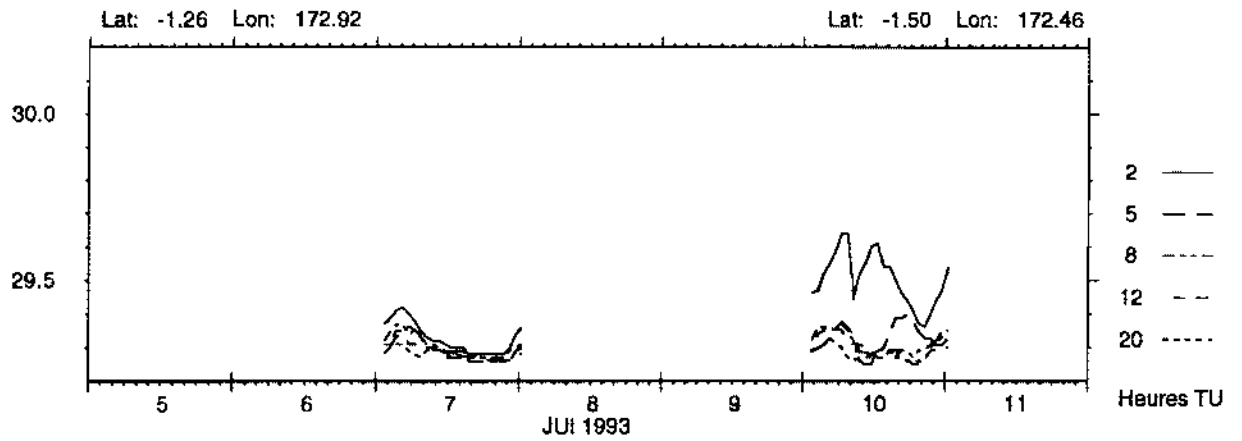
17618



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Bouée dérivante BODEGA 17619

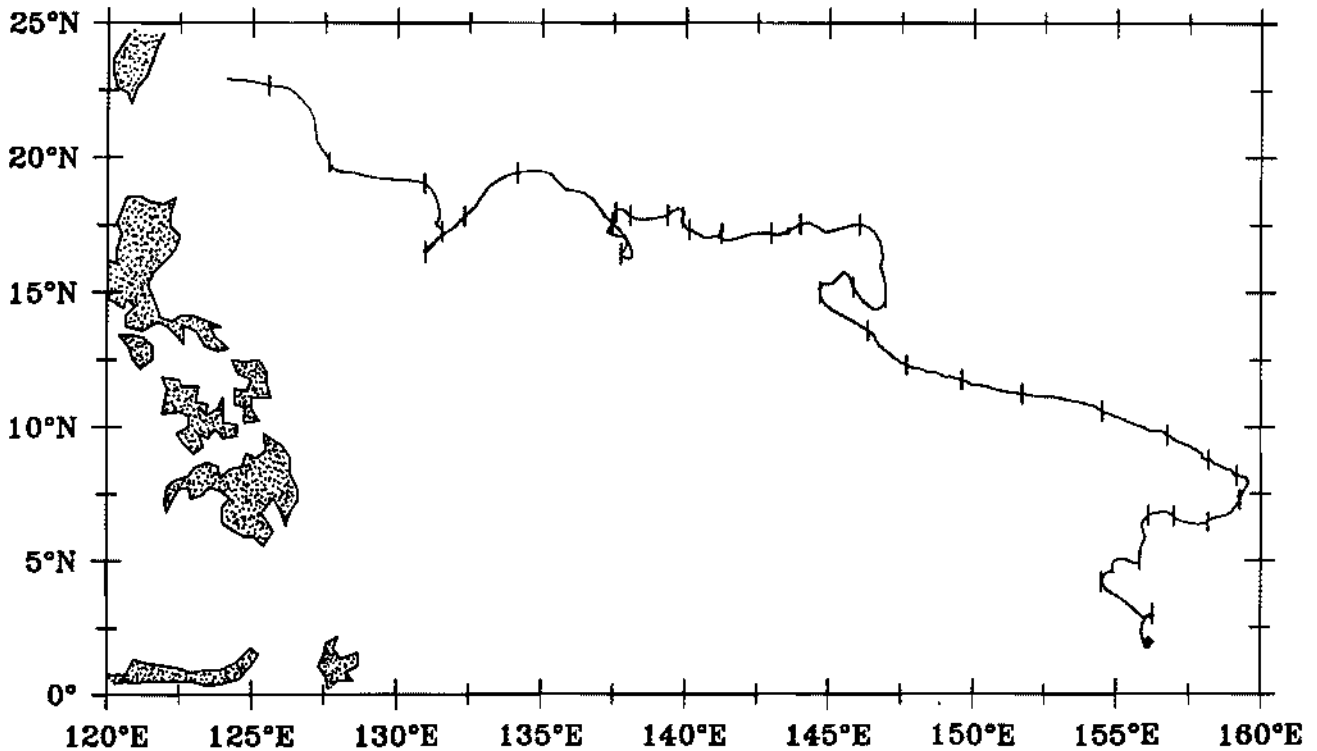
Date début et position : 31/12/1992 à 2°N, 156.03°E
Launch date and position
 Date fin et position : 02/01/94 à 22.90°N, 123.94°E
End date and position

Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

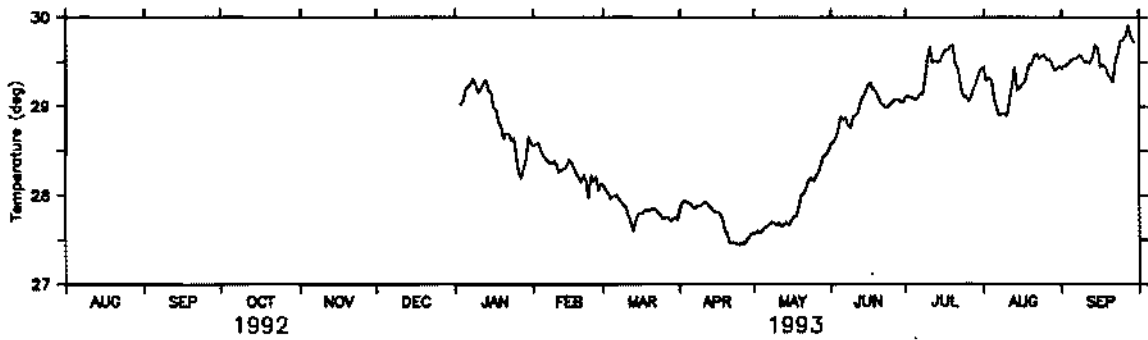
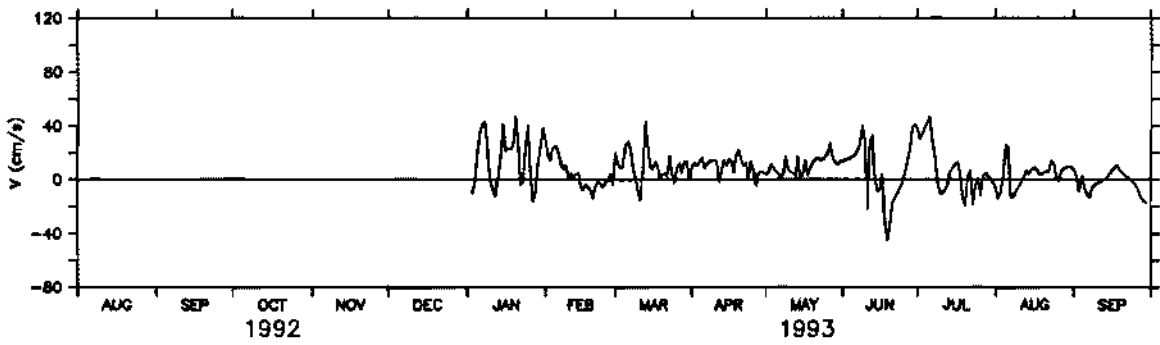
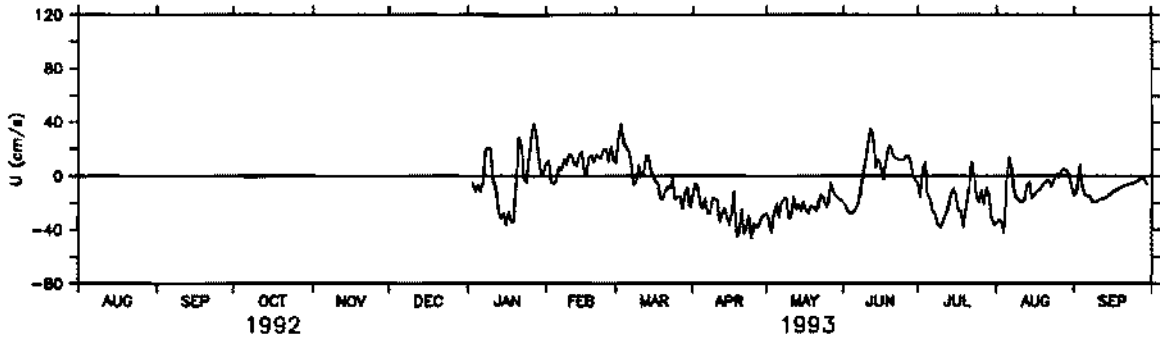
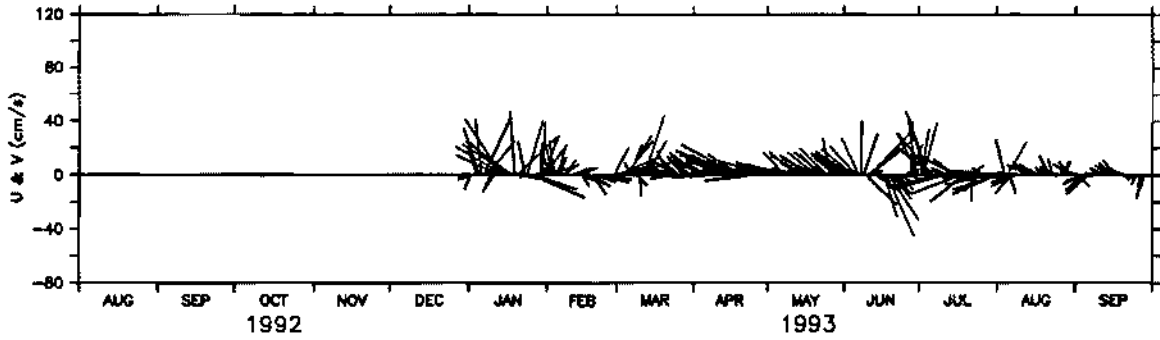
<p>. cycle 62 (07/03/93) : +0.01 capteur 2m +0.01 capteur 8m</p> <p>. cycle 65 (14/03/93) : +0.04 capteur 2m -0.01 capteur 5m +0.04 capteur 8m +0.02 capteur 12m</p> <p>. cycle 66 (19/03/93) : +0.03 capteur 12m</p> <p>. cycle 70 (31/03/93) : +0.07 capteur 2m +0.08 capteur 8m +0.06 capteur 12m</p> <p>. cycle 73 (09/04/93) : +0.10 capteur 2m</p>	<p>. cycle 78 (24/04/93) : +0.12 capteur 2m +0.14 capteur 8m +0.10 capteur 12m</p> <p>. cycle 87 (21/05/93) : +0.17 capteur 2m -0.04 capteur 5m +0.21 capteur 8m +0.15 capteur 12m</p> <p>. cycle 106 (20/7/93) : -0.04 capteur 2m +0.48 capteur 5m +0.02 capteur 8m</p>
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Les données des capteurs de température dérivent beaucoup après le mois de juin 1993. Les données après septembre 93 ne sont pas présentées à cause des dérives trop importantes. *Important sensor drifts after June 93. Data are not presented after September 93 due to too important drift.*

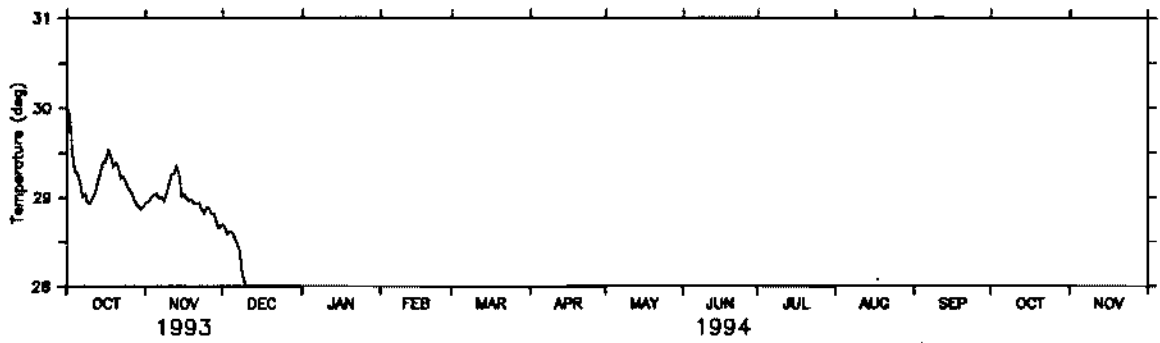
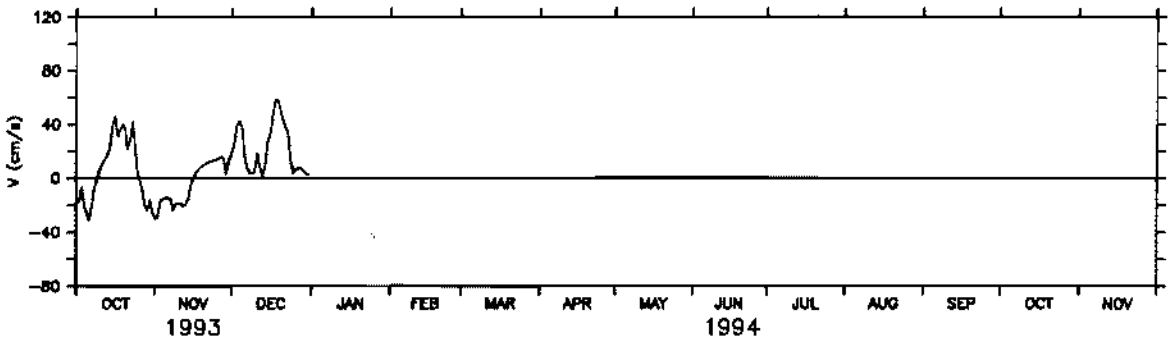
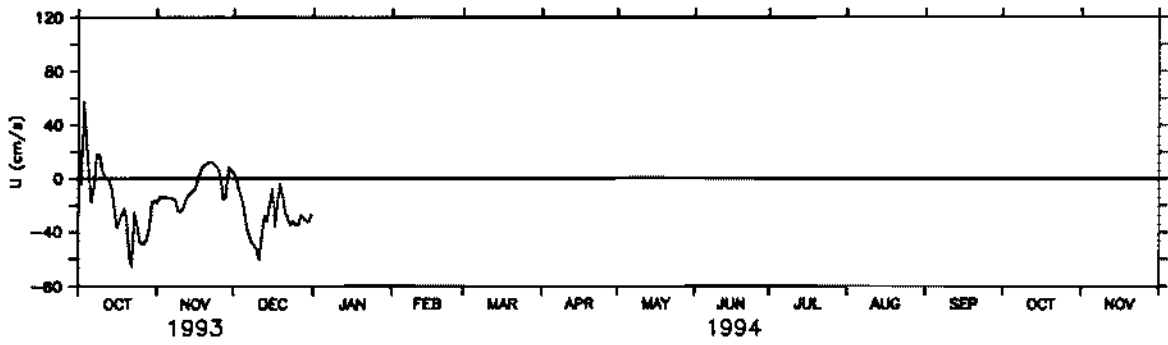
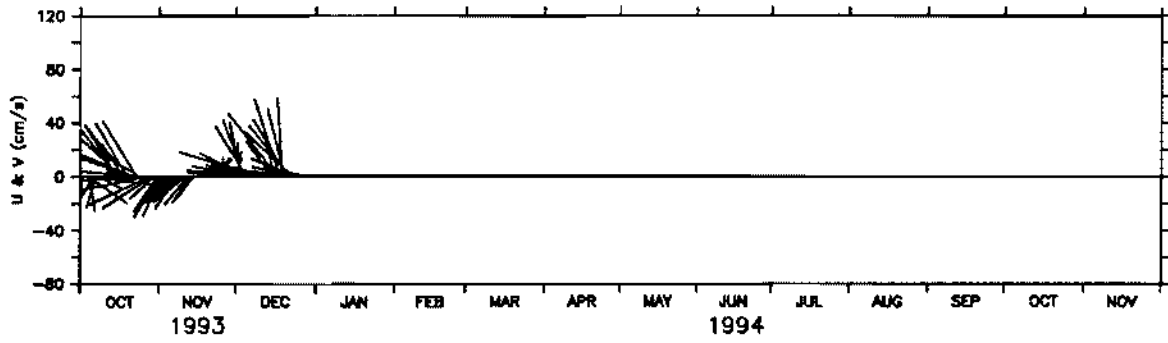
17619



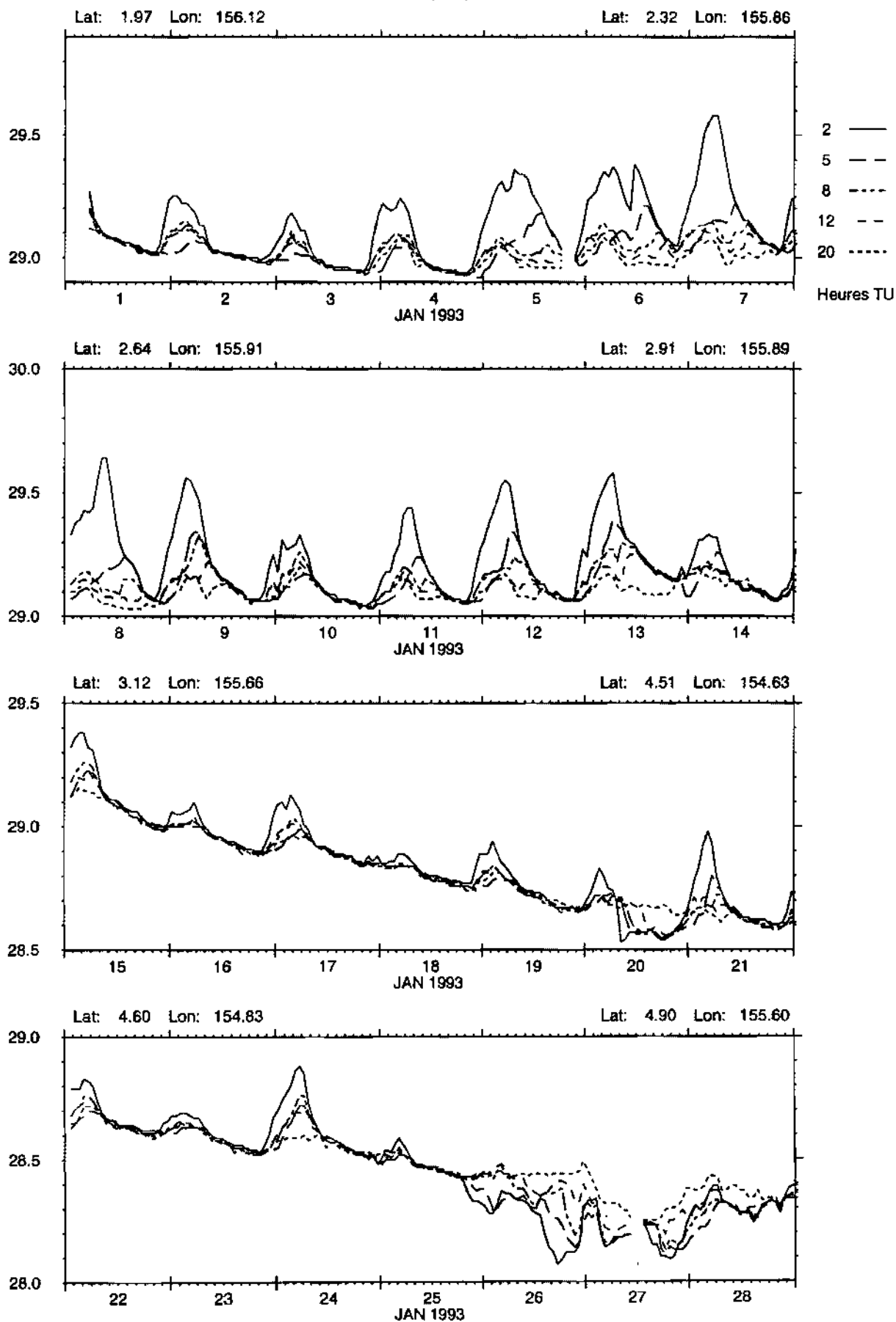
N°17619



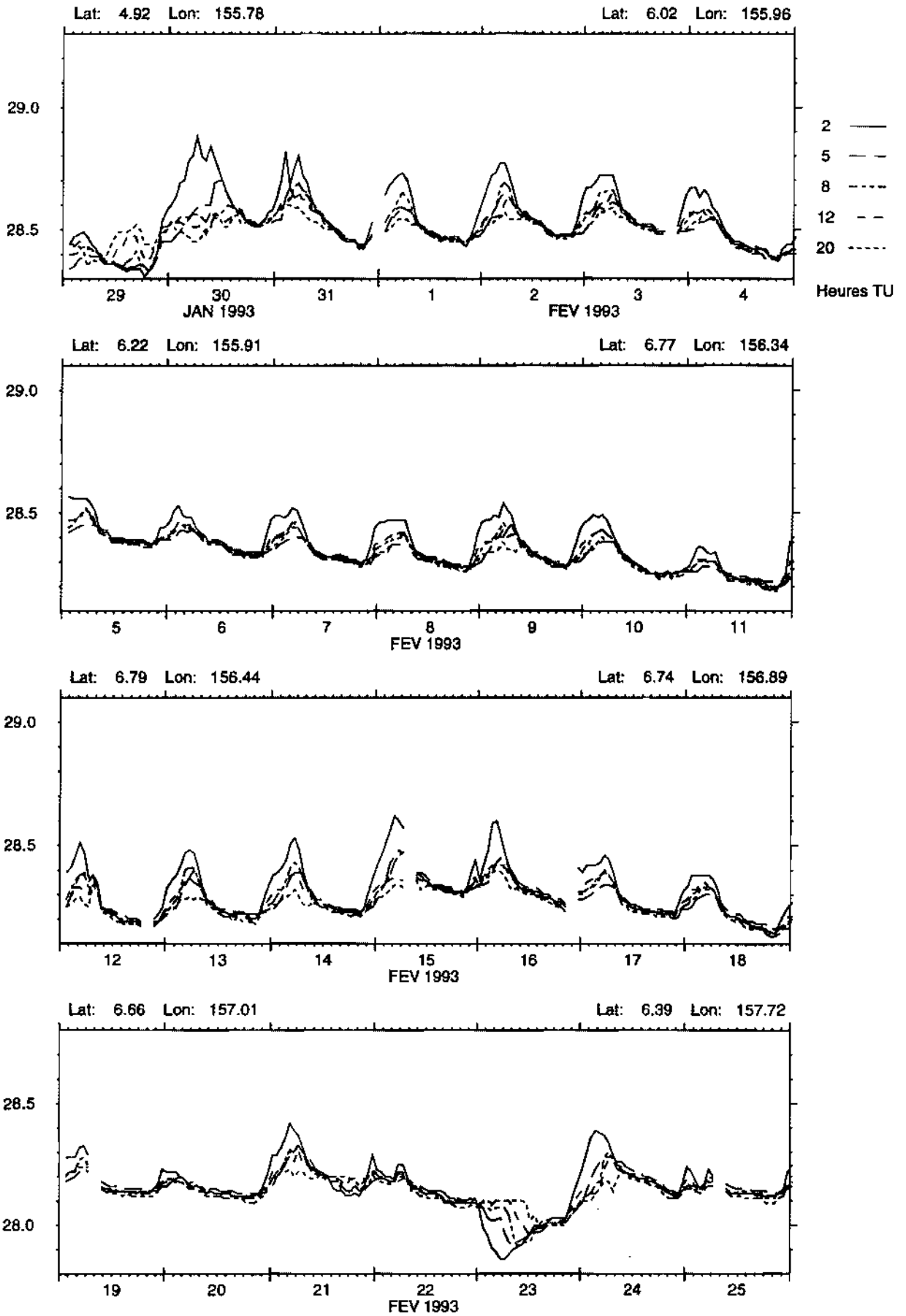
N°17619



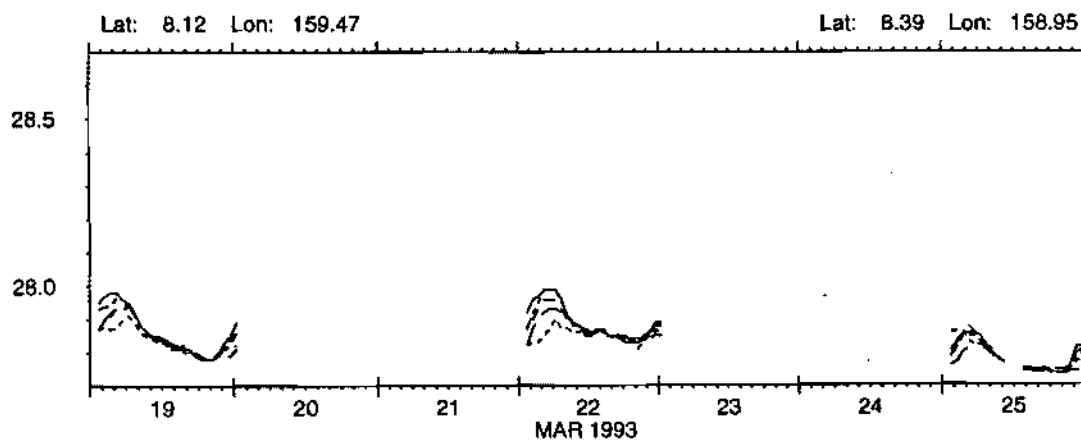
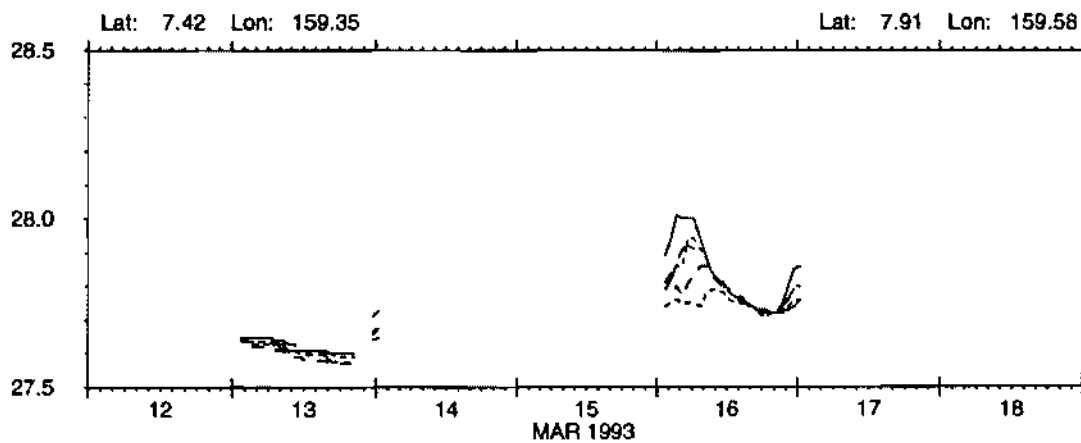
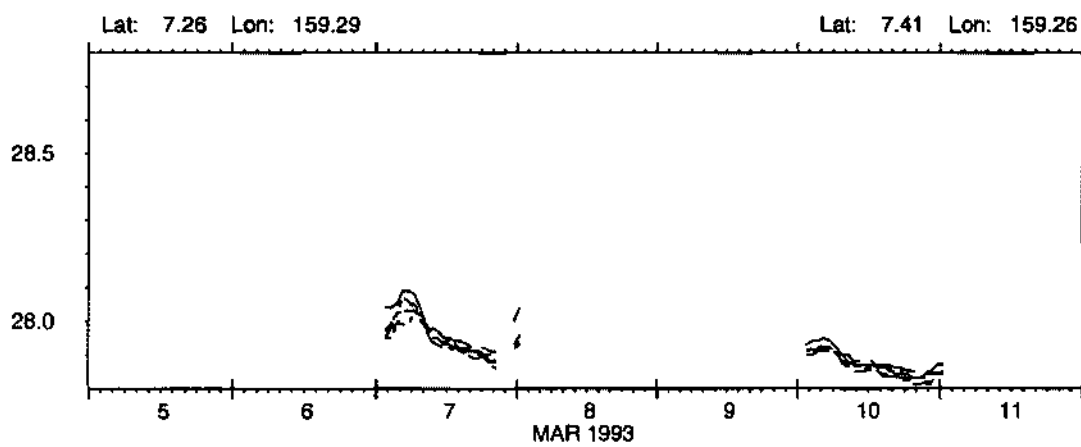
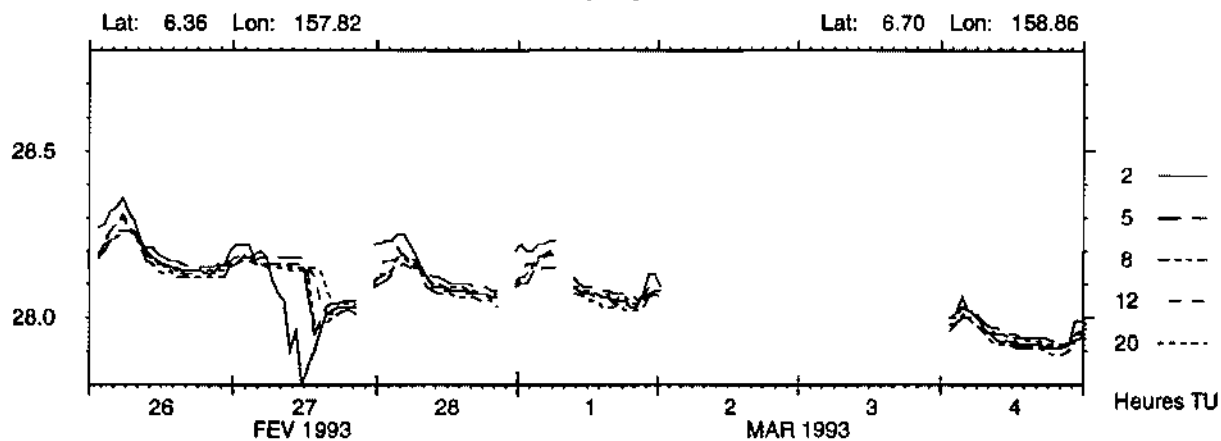
17619



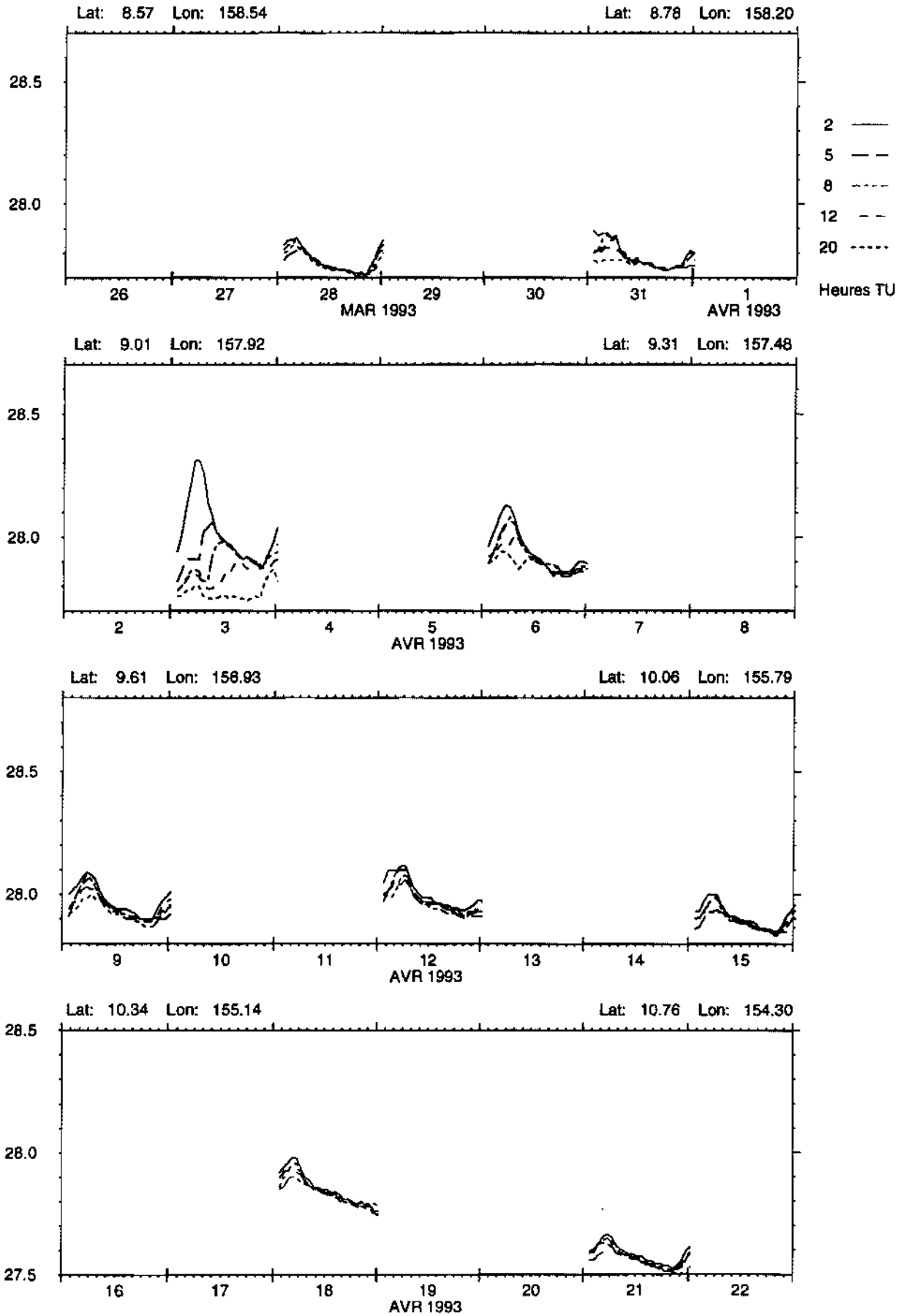
17619



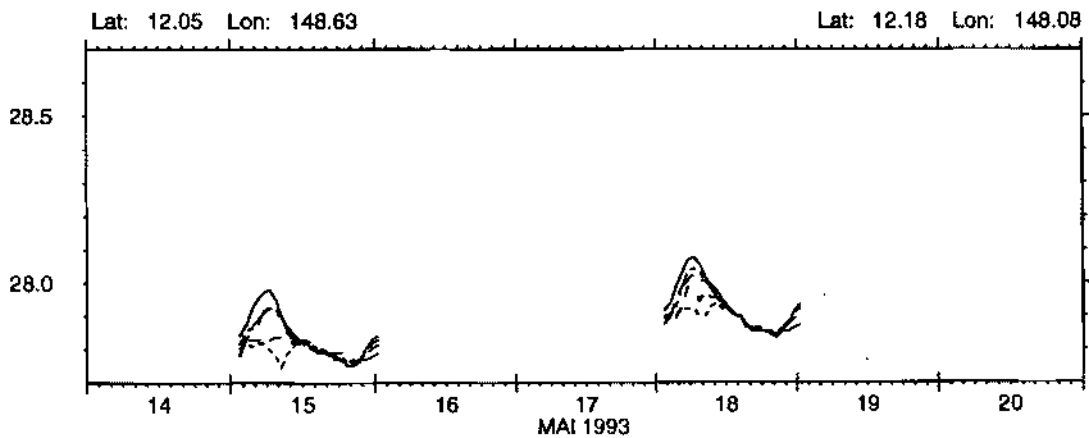
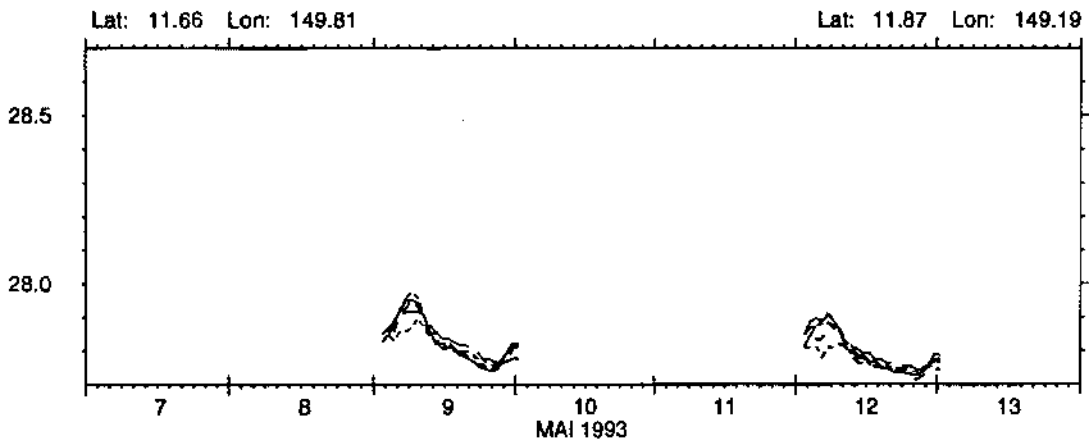
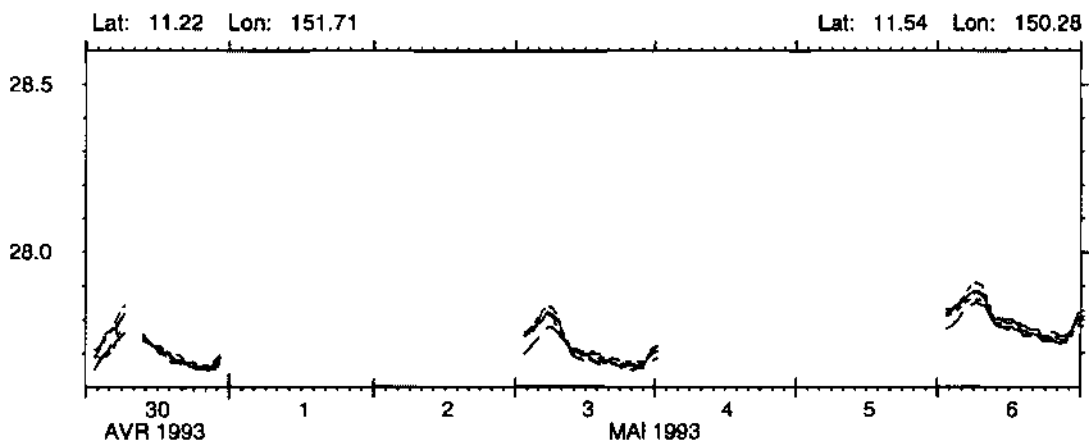
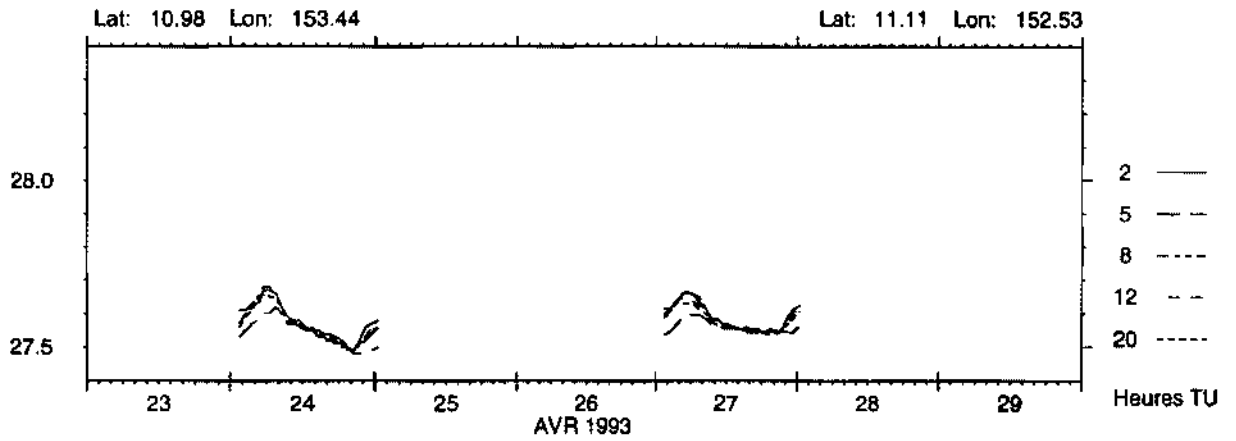
17619



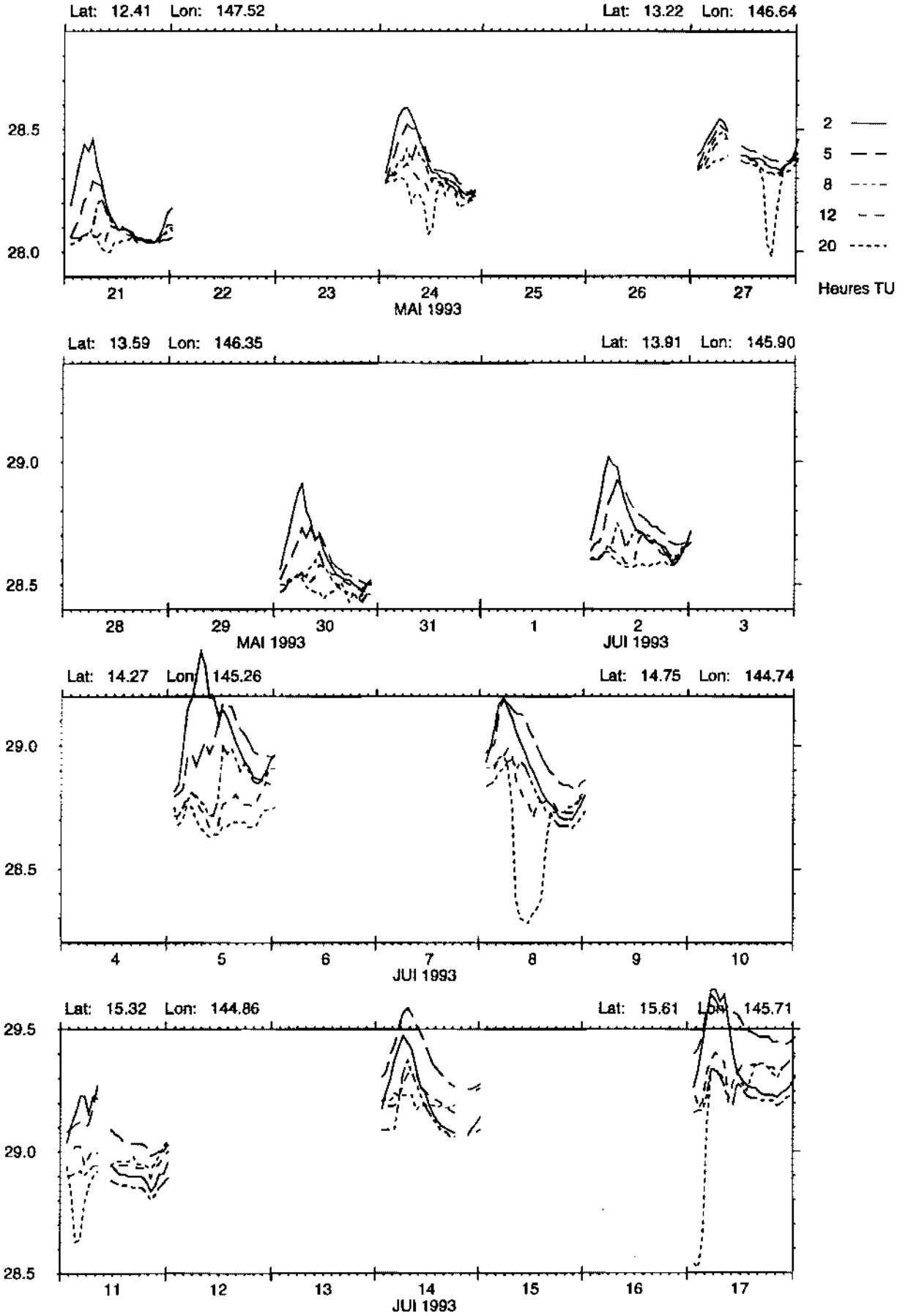
17619



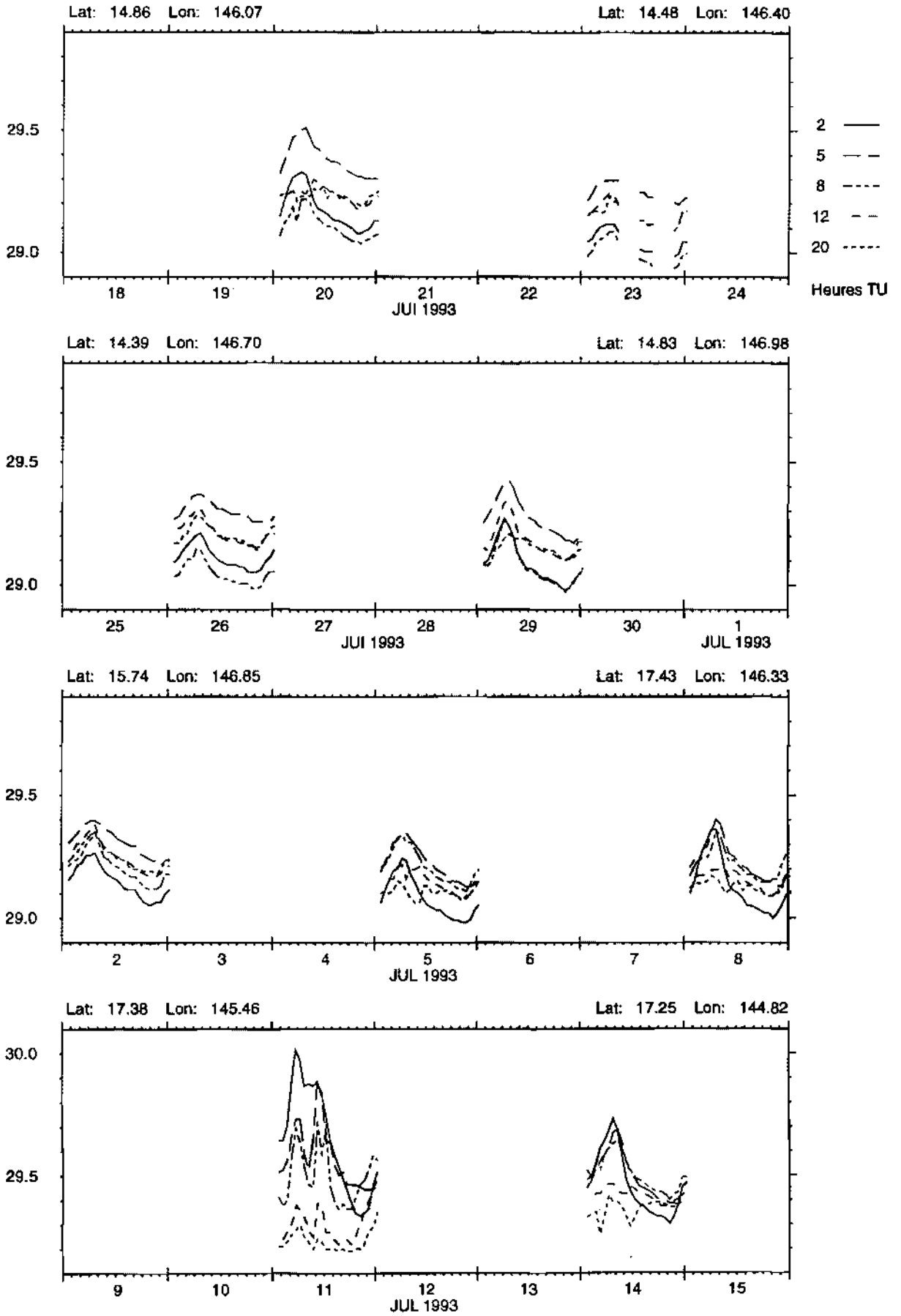
17619



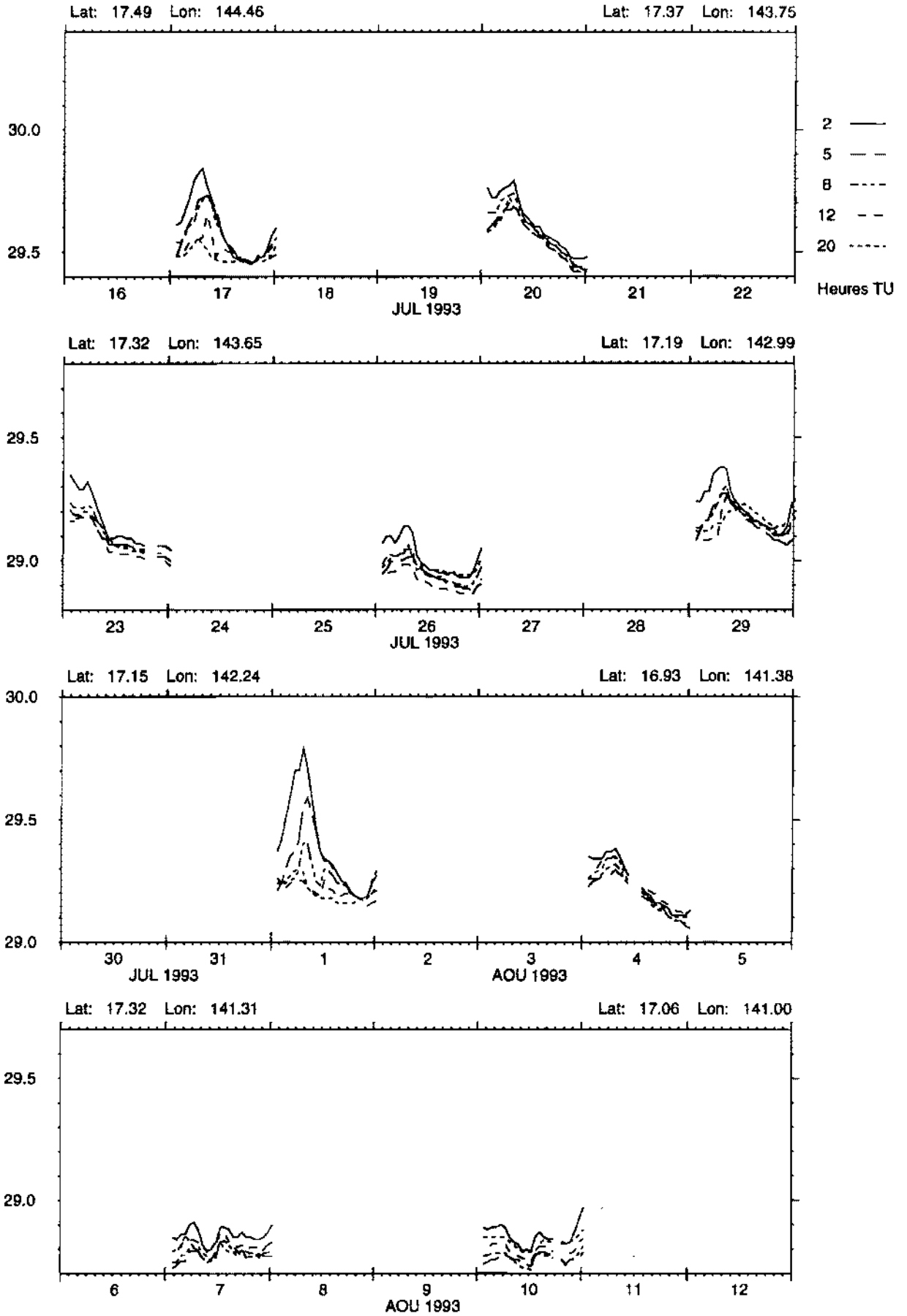
17619



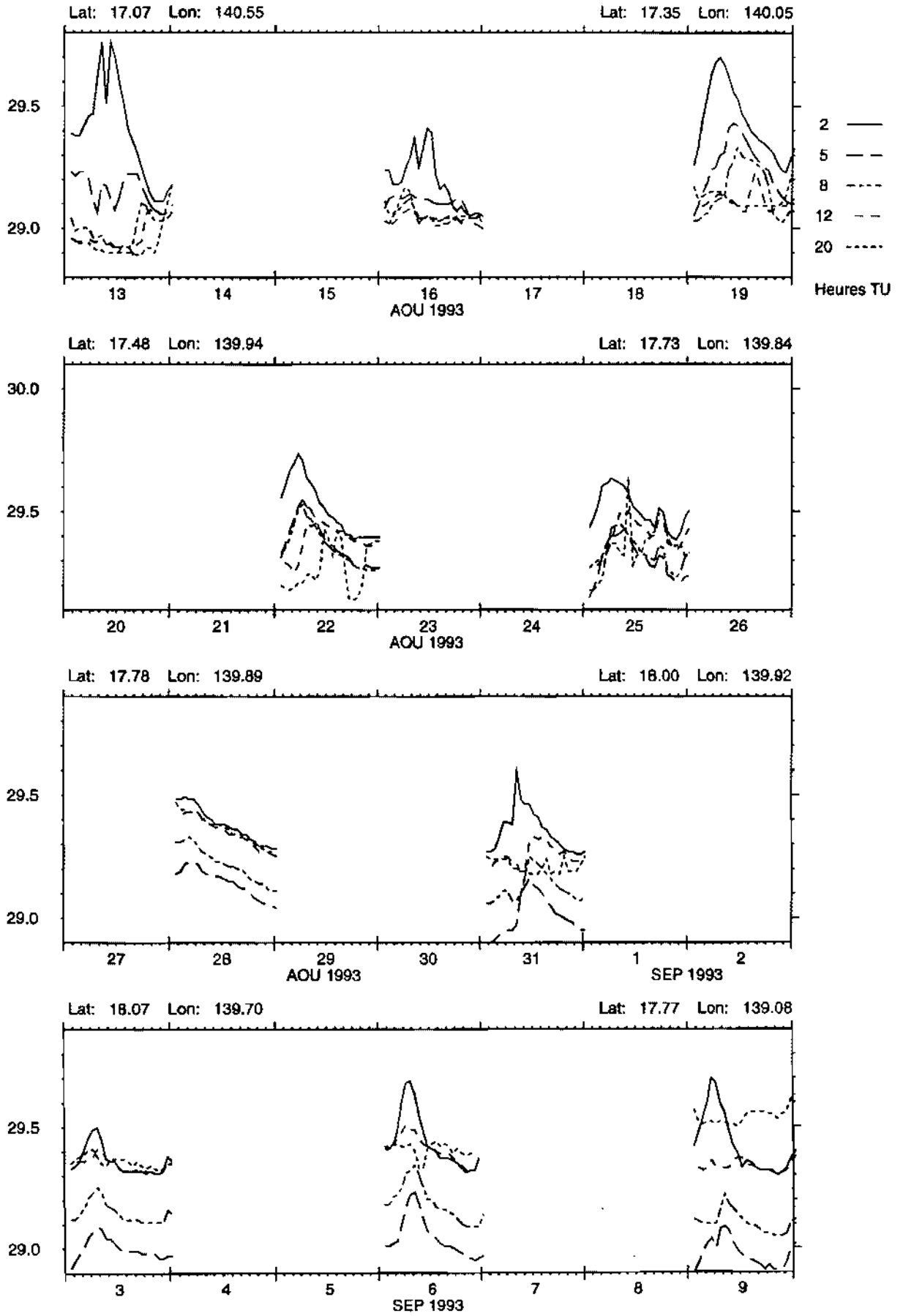
17619



17619



17619



Bouée dérivante BODEGA n° 17620

Date début et position : 03/01/93 à 0.03°N, 156.00°E

Launch date and position

Date fin et position : 31/5/94 à 17.43°S, 161.19°E

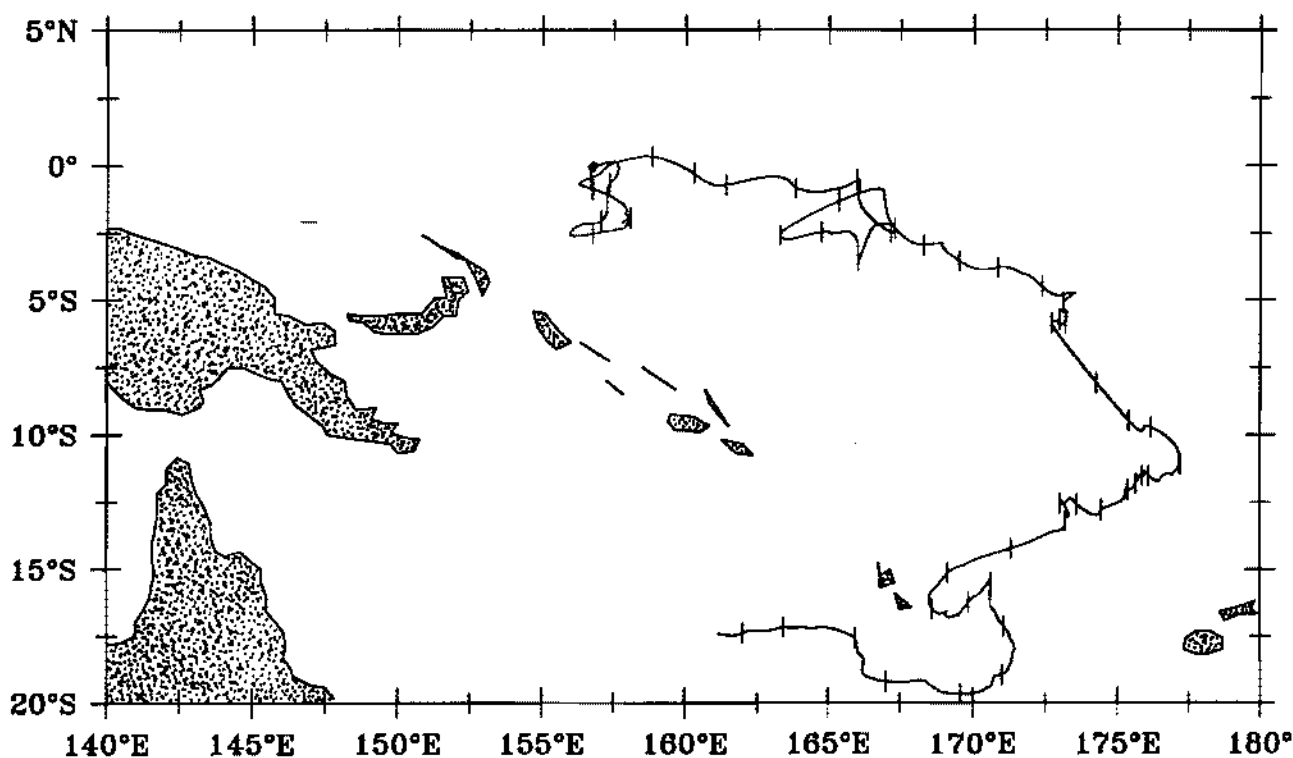
End date and position

Corrections effectuées pour compenser les dérives de capteurs :

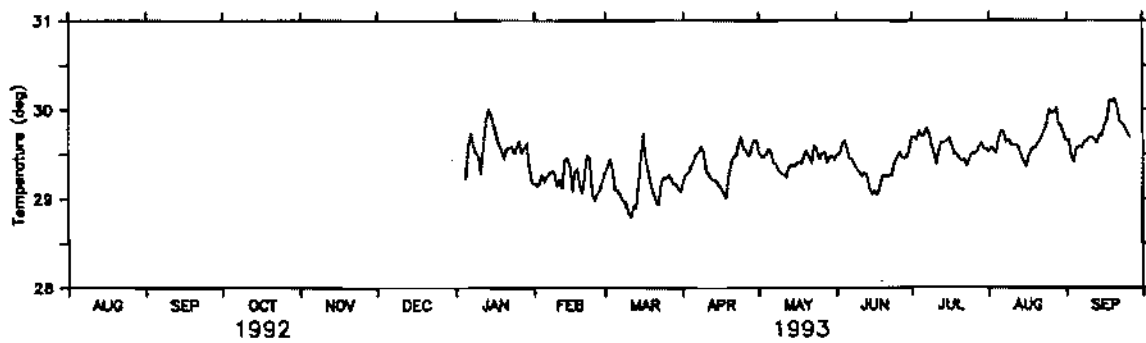
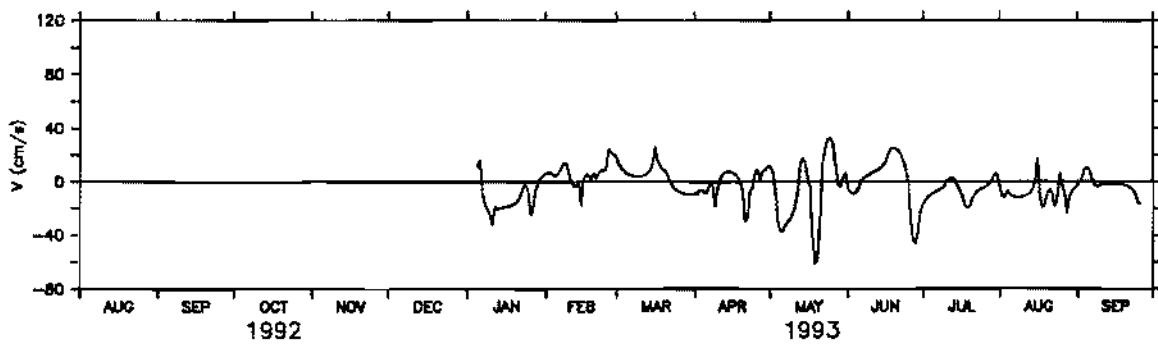
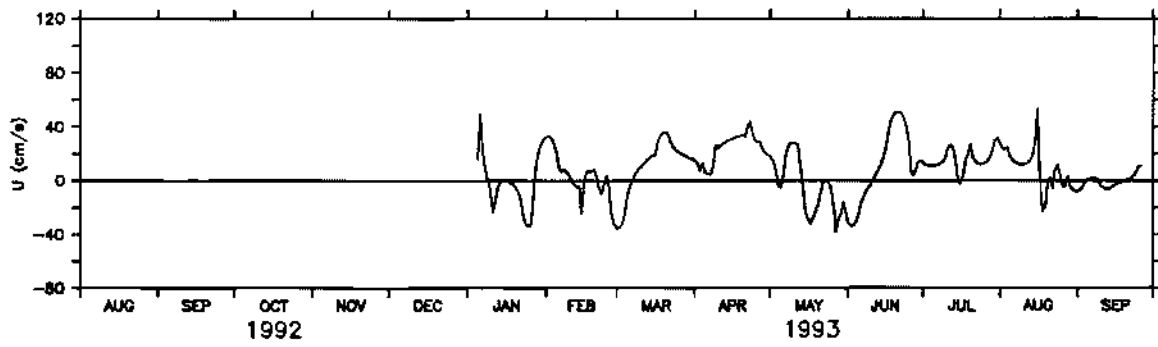
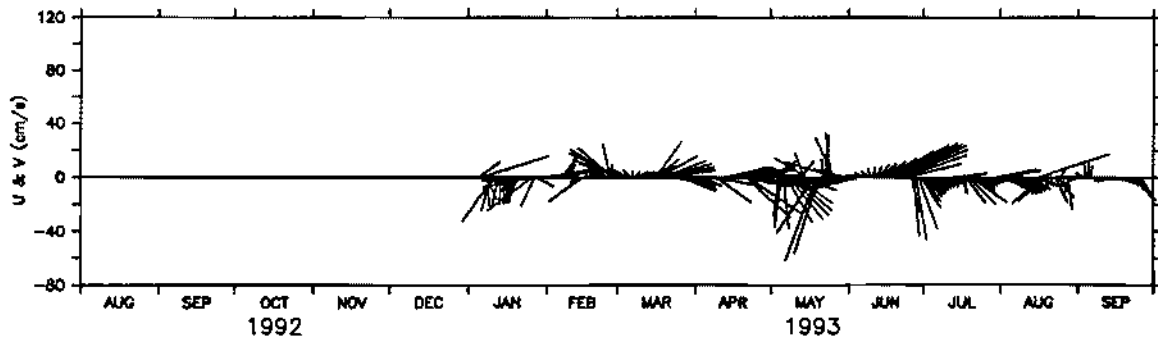
Proposed corrections to compensate sensor drifts

<p>cycle 64 (19/03/93) : 0.03 capteur 12m</p> <p>cycle 69 (03/04/93) : 0.01 capteur 8m 0.08 capteur 12m</p> <p>cycle 78 (30/04/93) : 0.01 capteur 5m 0.03 capteur 8m 0.19 capteur 12m</p> <p>cycle 86 (24/05/93) : 0.02 capteur 5m 0.03 capteur 8m 0.27 capteur 12m</p> <p>cycle 99 (02/07/93) : 0.05 capteur 5m 0.03 capteur 8m 0.32 capteur 12m</p>	<p>cycle 104 (17/7/93) : 0.38 capteur 12m</p> <p>cycle 111 (07/8/93) : 0.09 capteur 8m</p> <p>cycle 112 (10/8/93) : 0.10 capteur 8m</p> <p>cycle 116 (22/8/93) : 0.12 capteur 8m</p> <p>cycle 119 (31/8/93) : 0.15 capteur 8m 0.45 capteur 12m 0.03 capteur 8m 0.27 capteur 12m</p> <p>cycle 128 (27/9/93) : 0.20 capteur 5m 0.27 capteur 12m</p>
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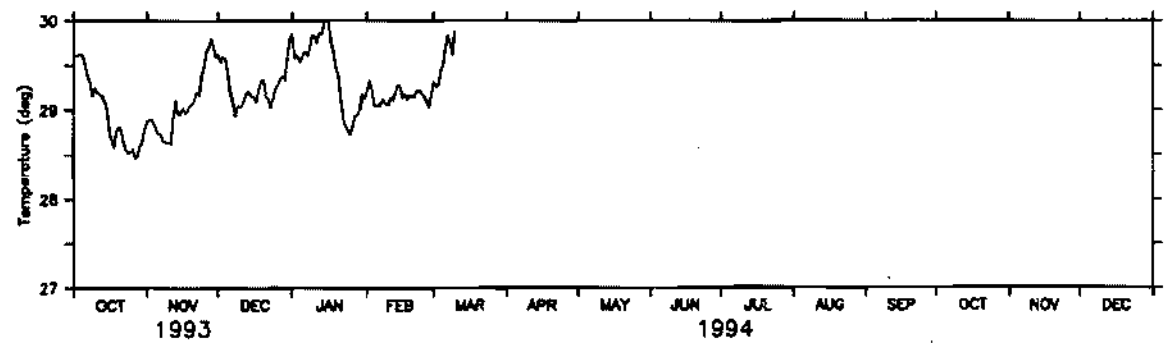
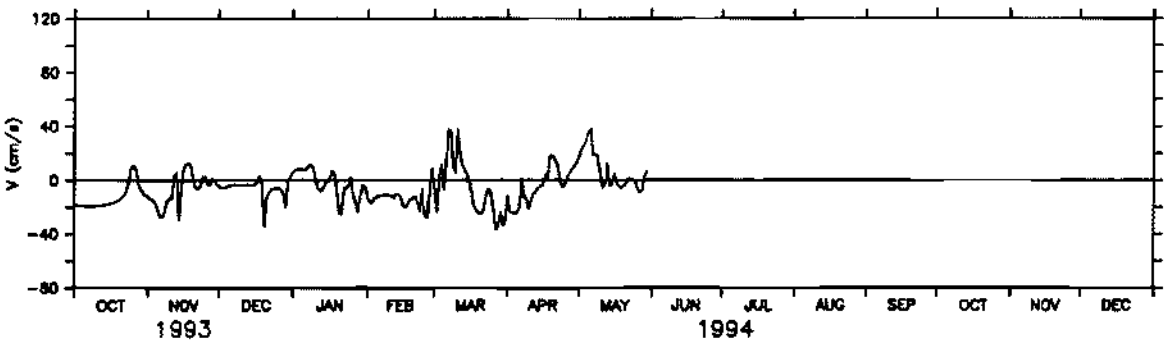
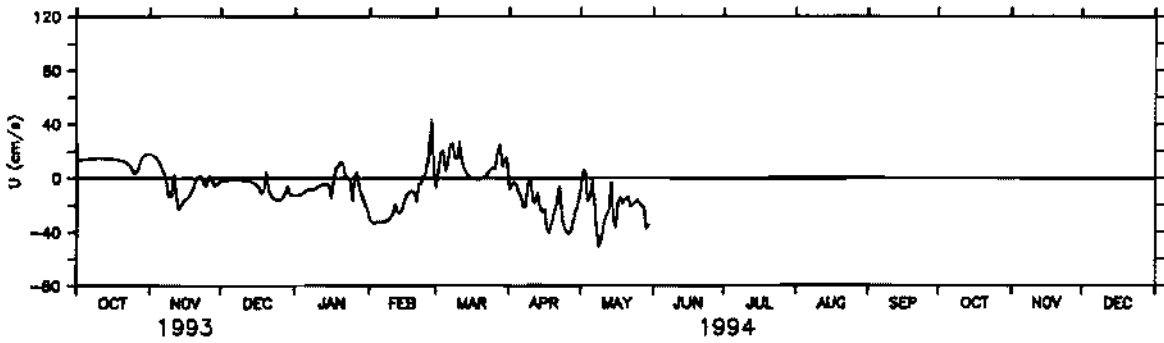
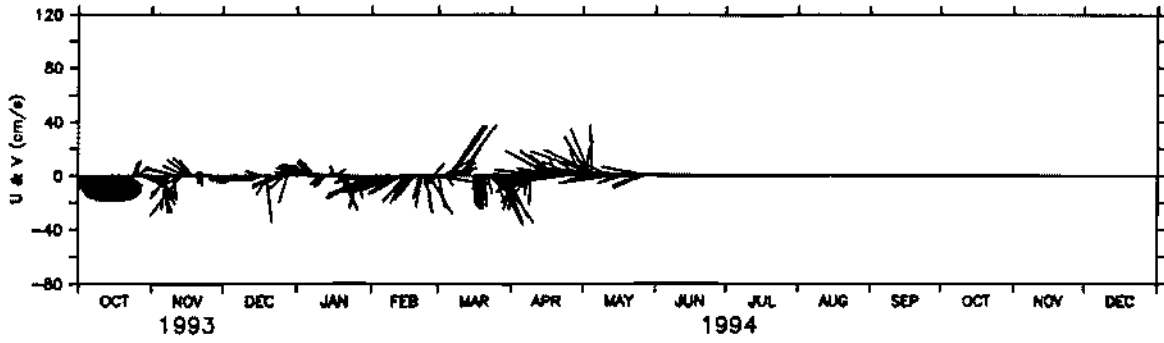
17620

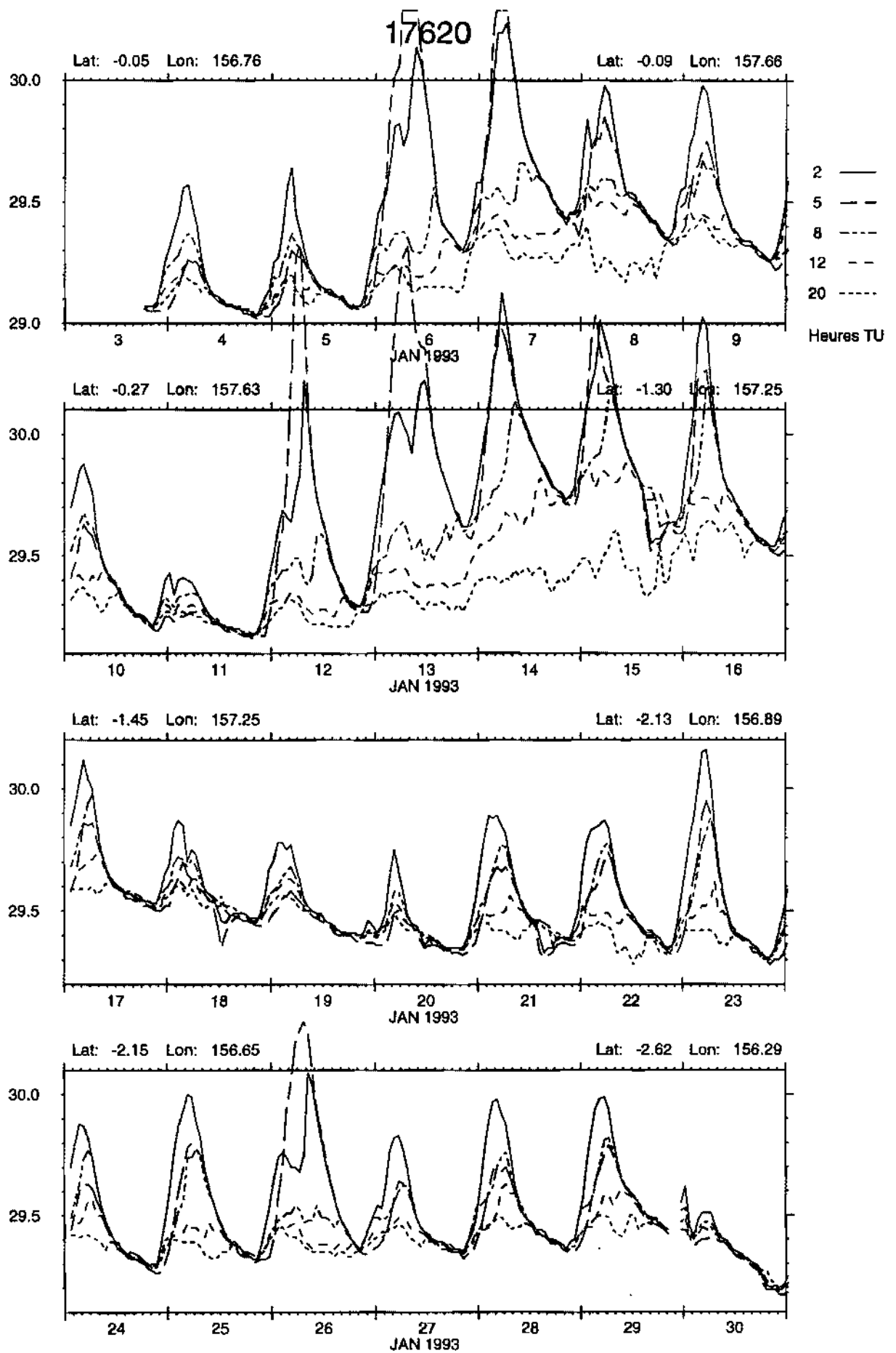


N°17620

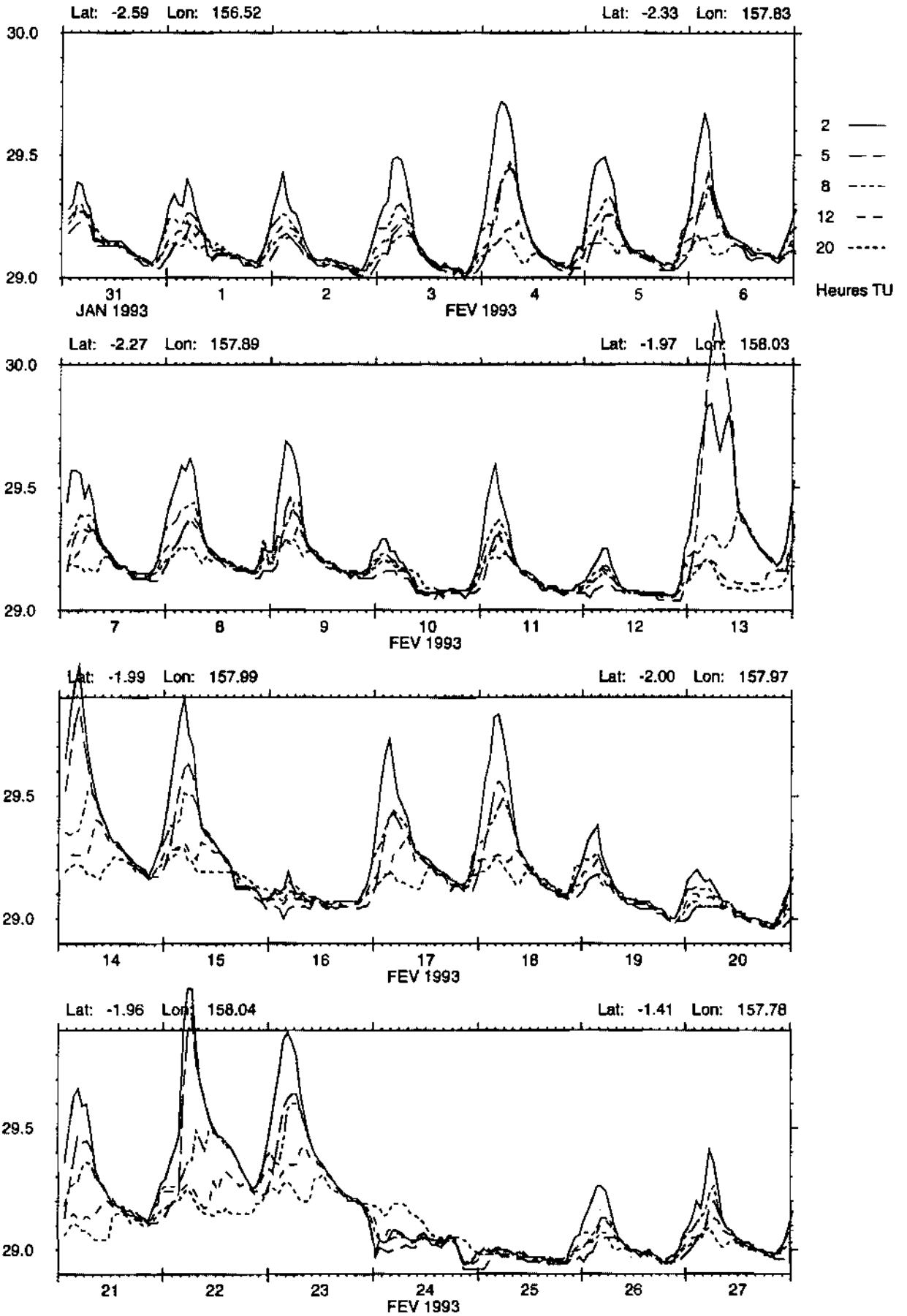


N°17620

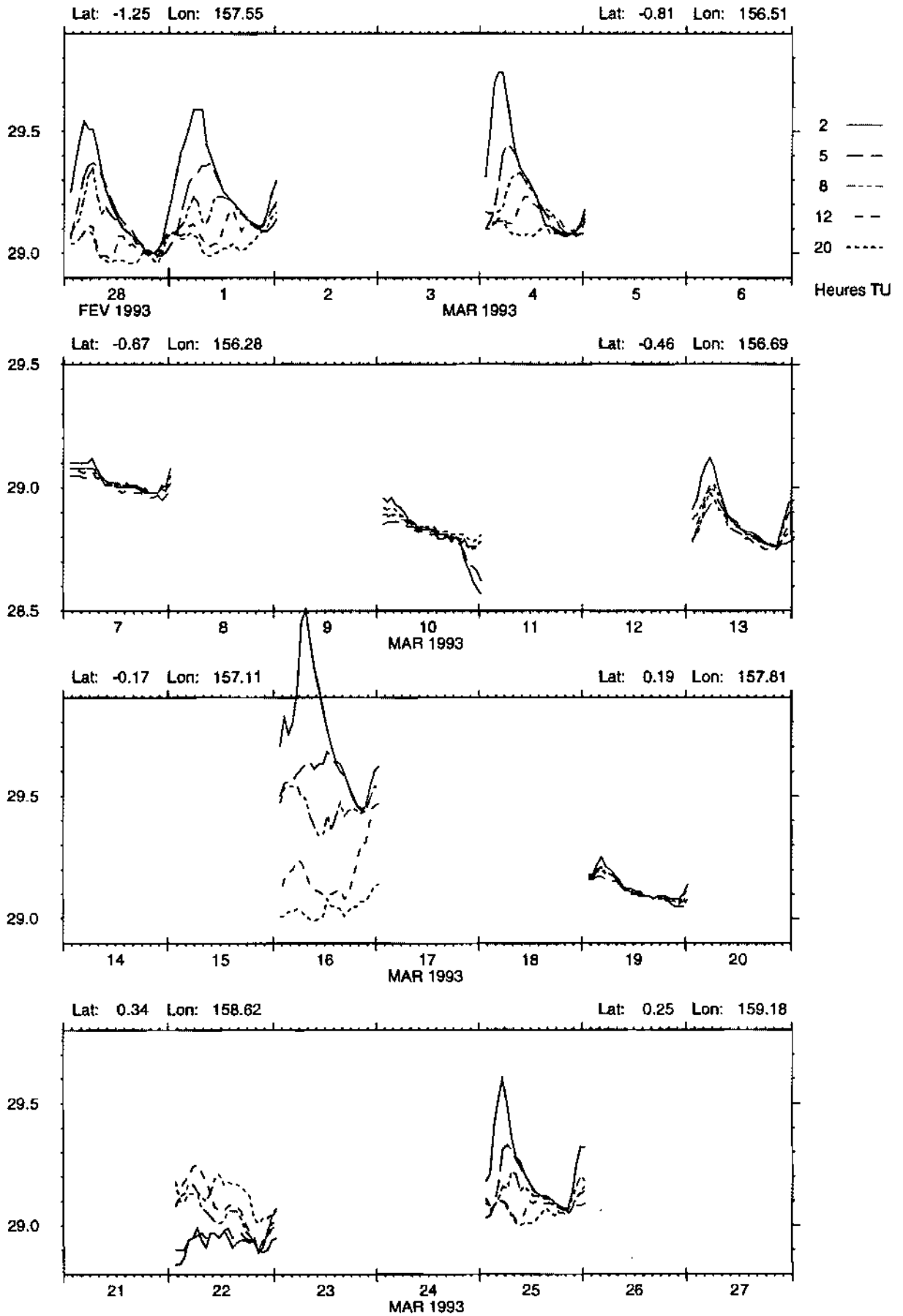




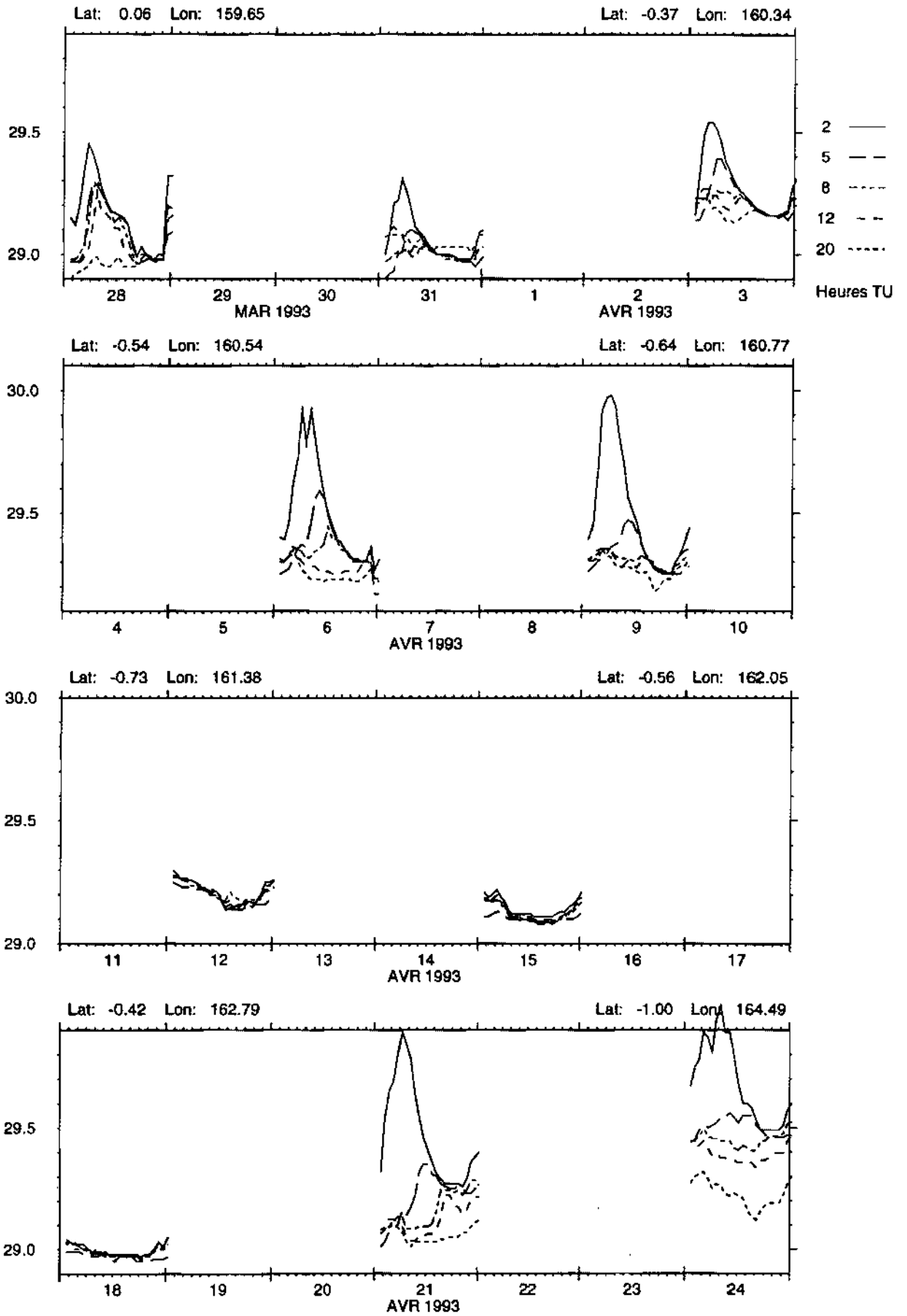
17620



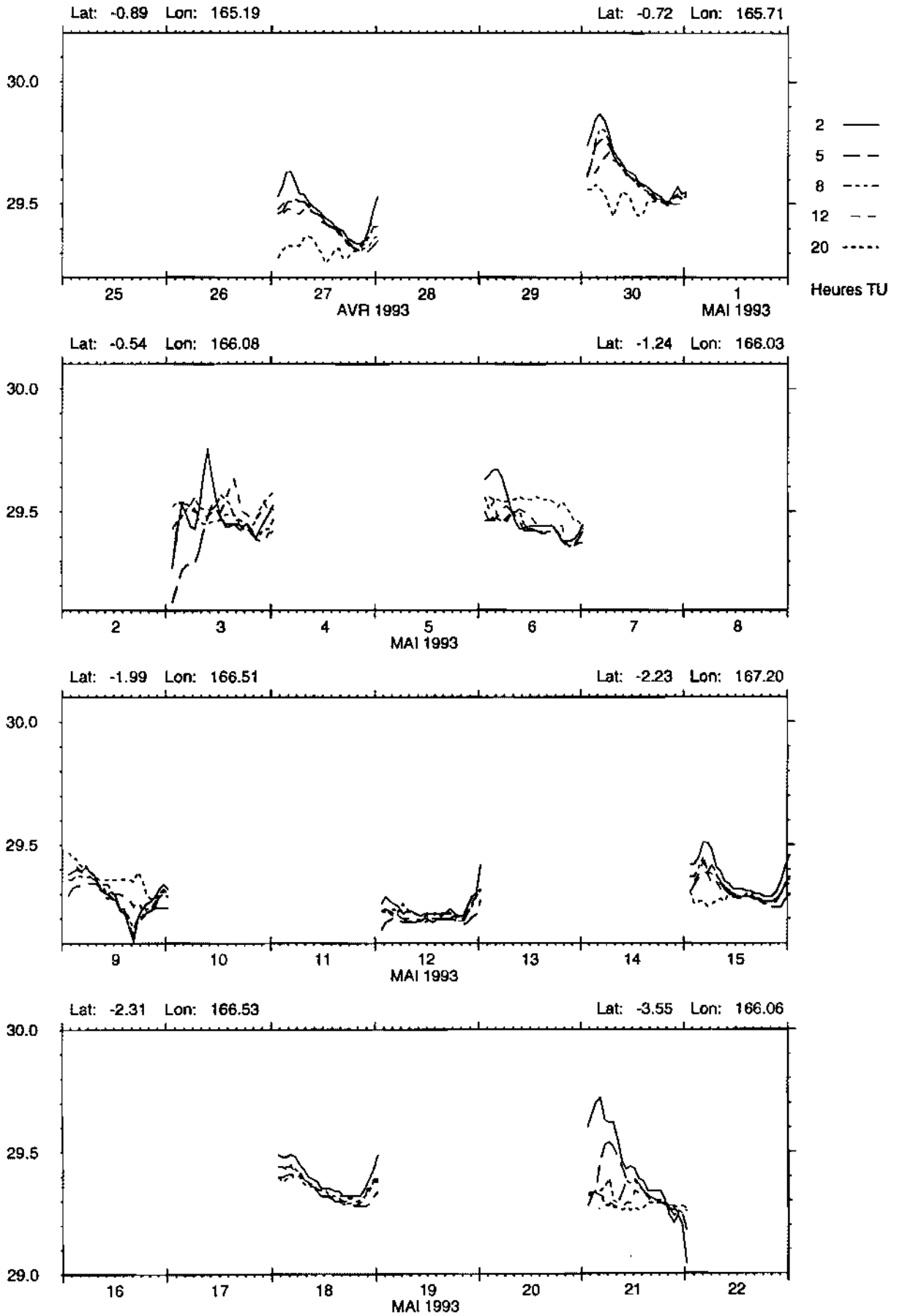
17620



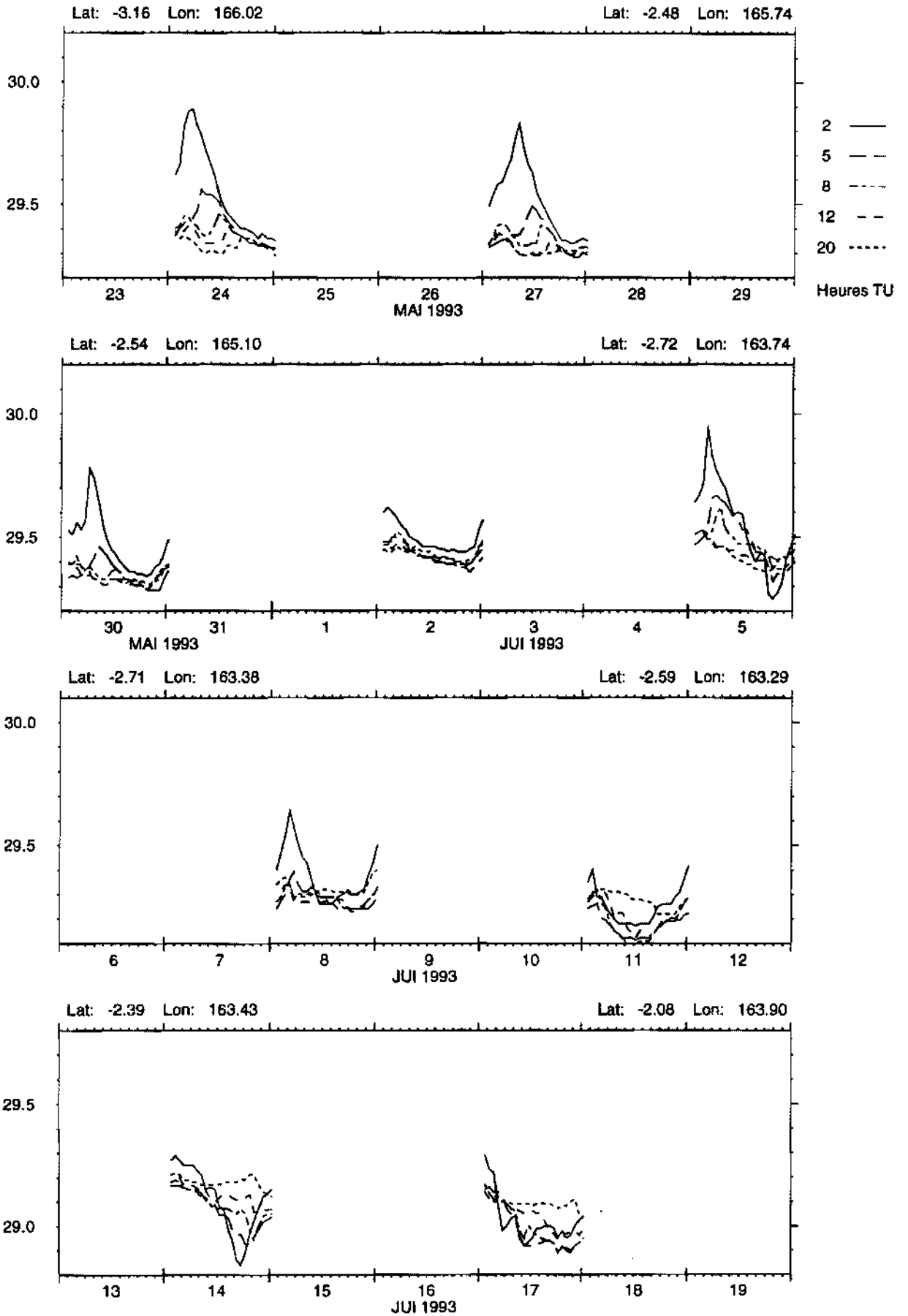
17620



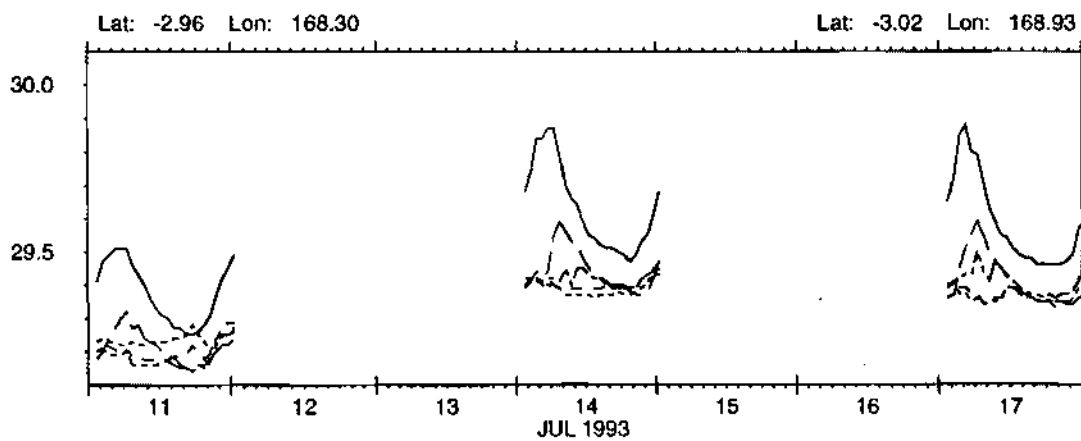
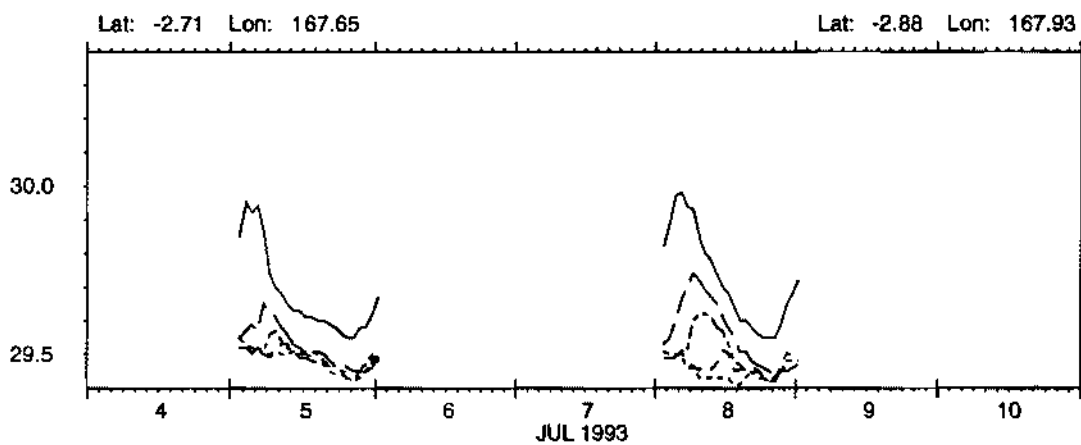
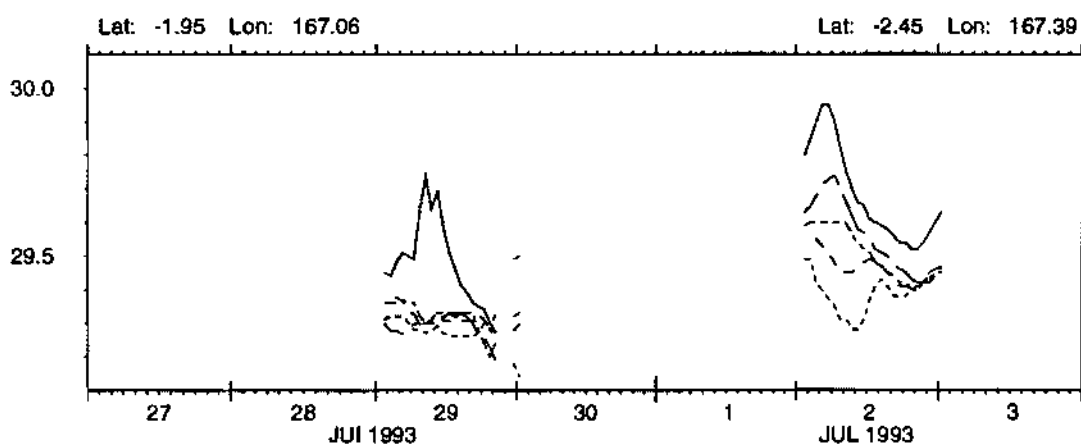
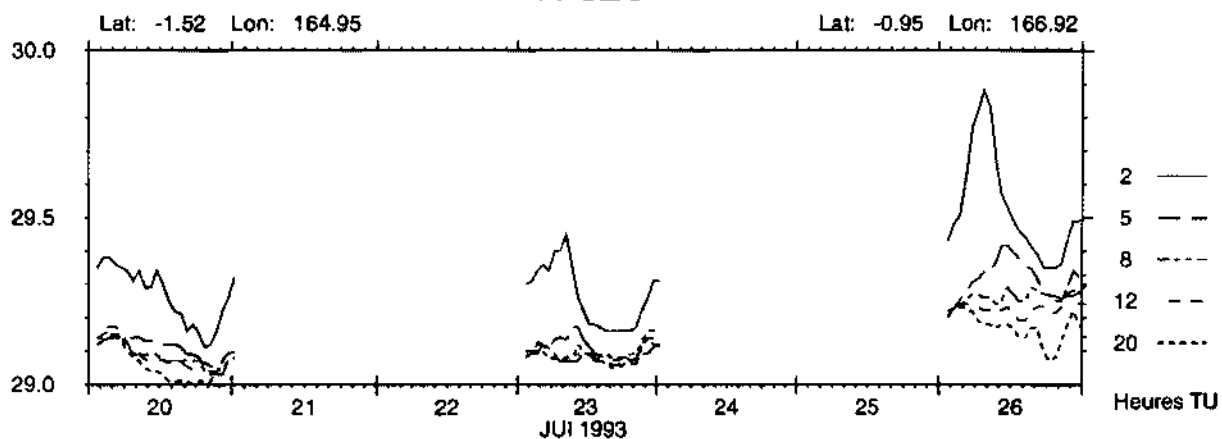
17620



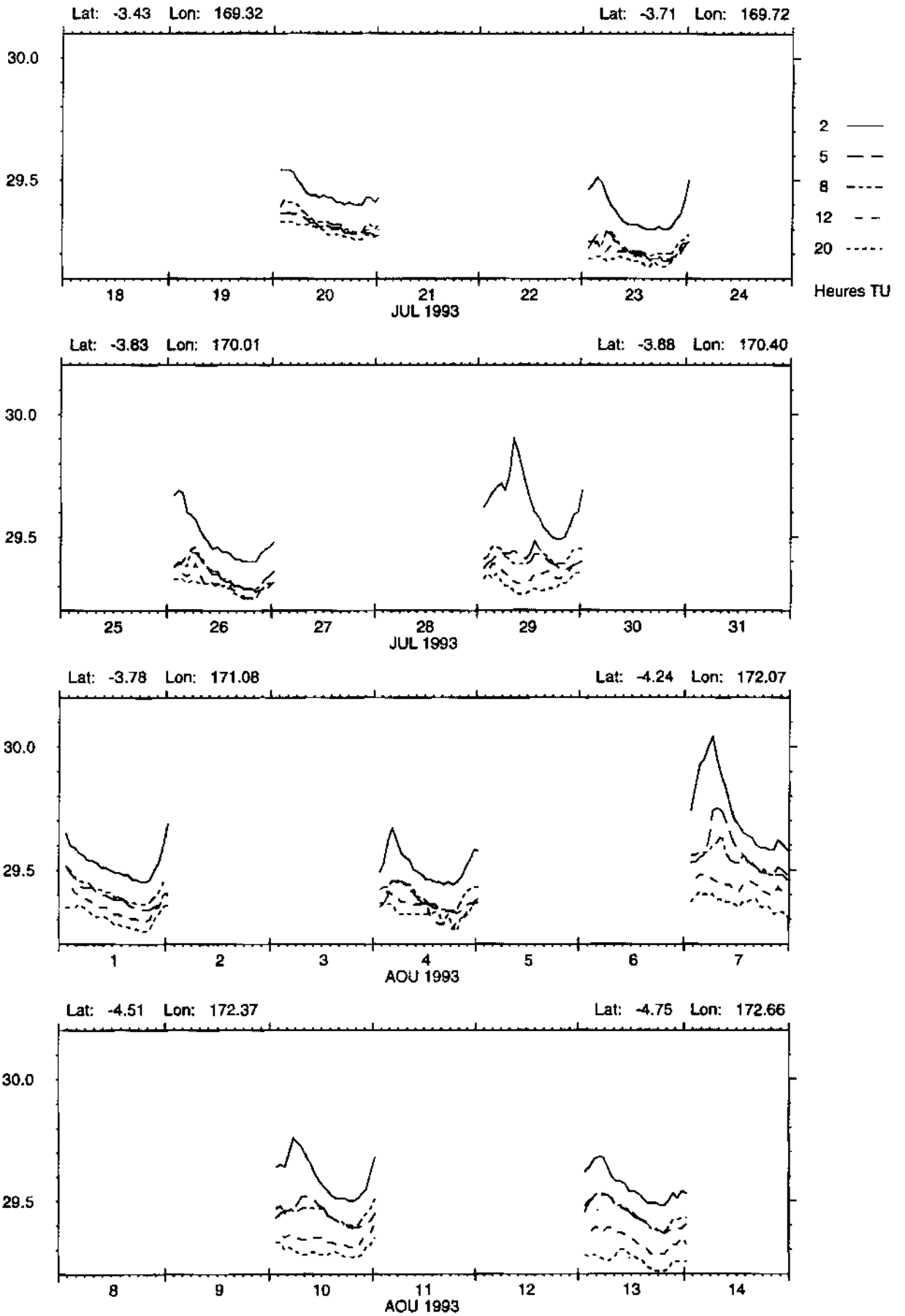
17620



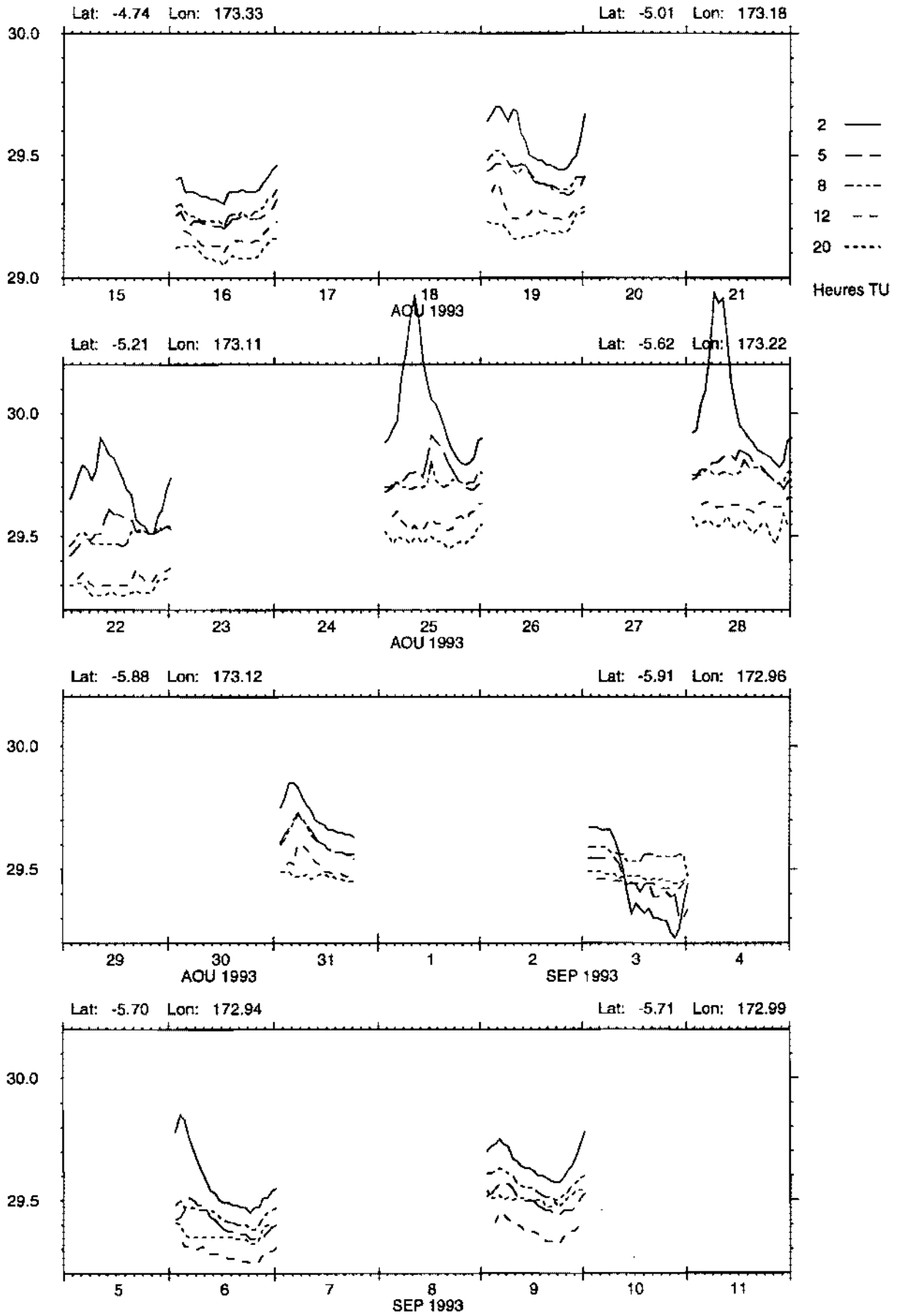
17620



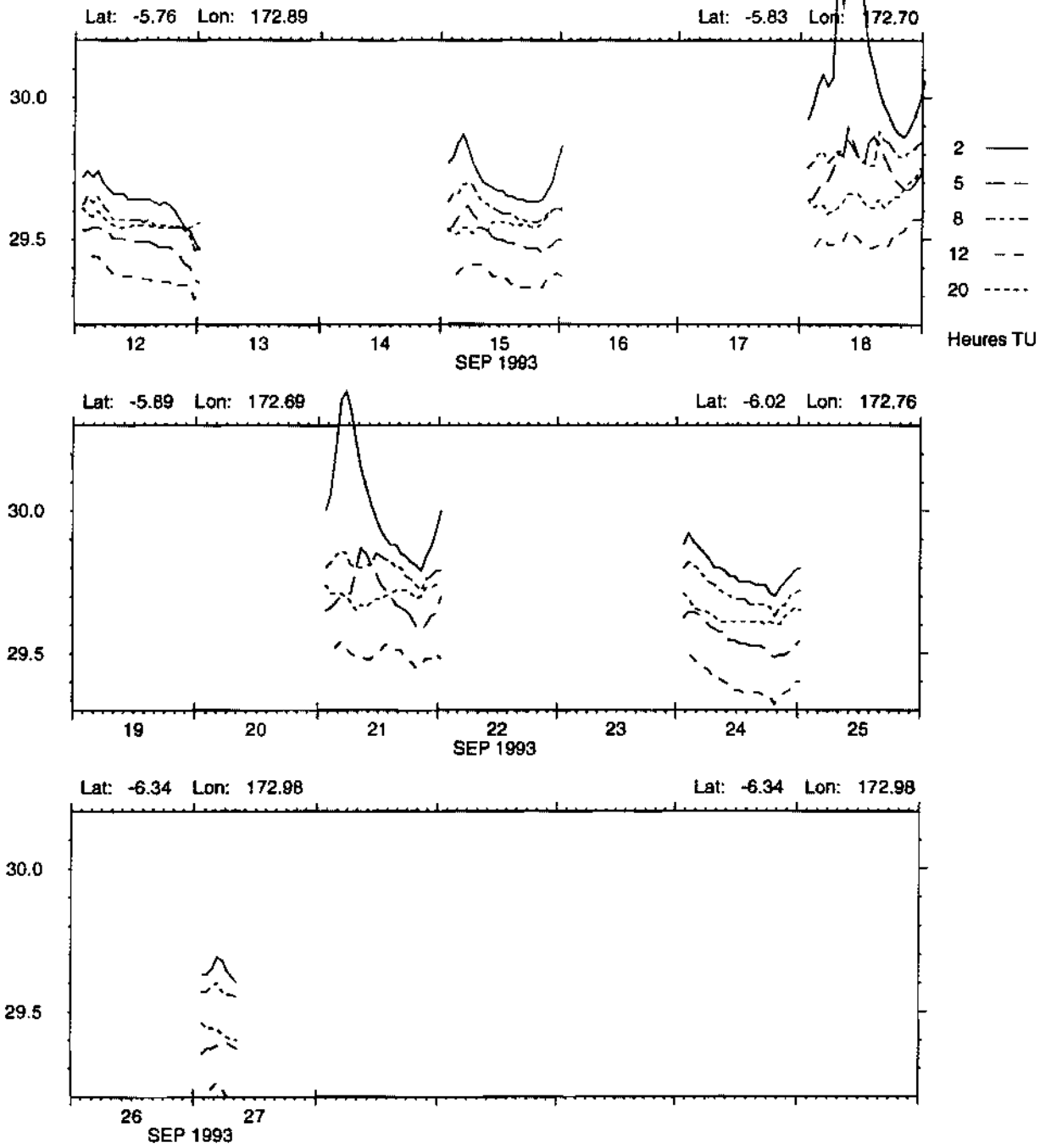
17620

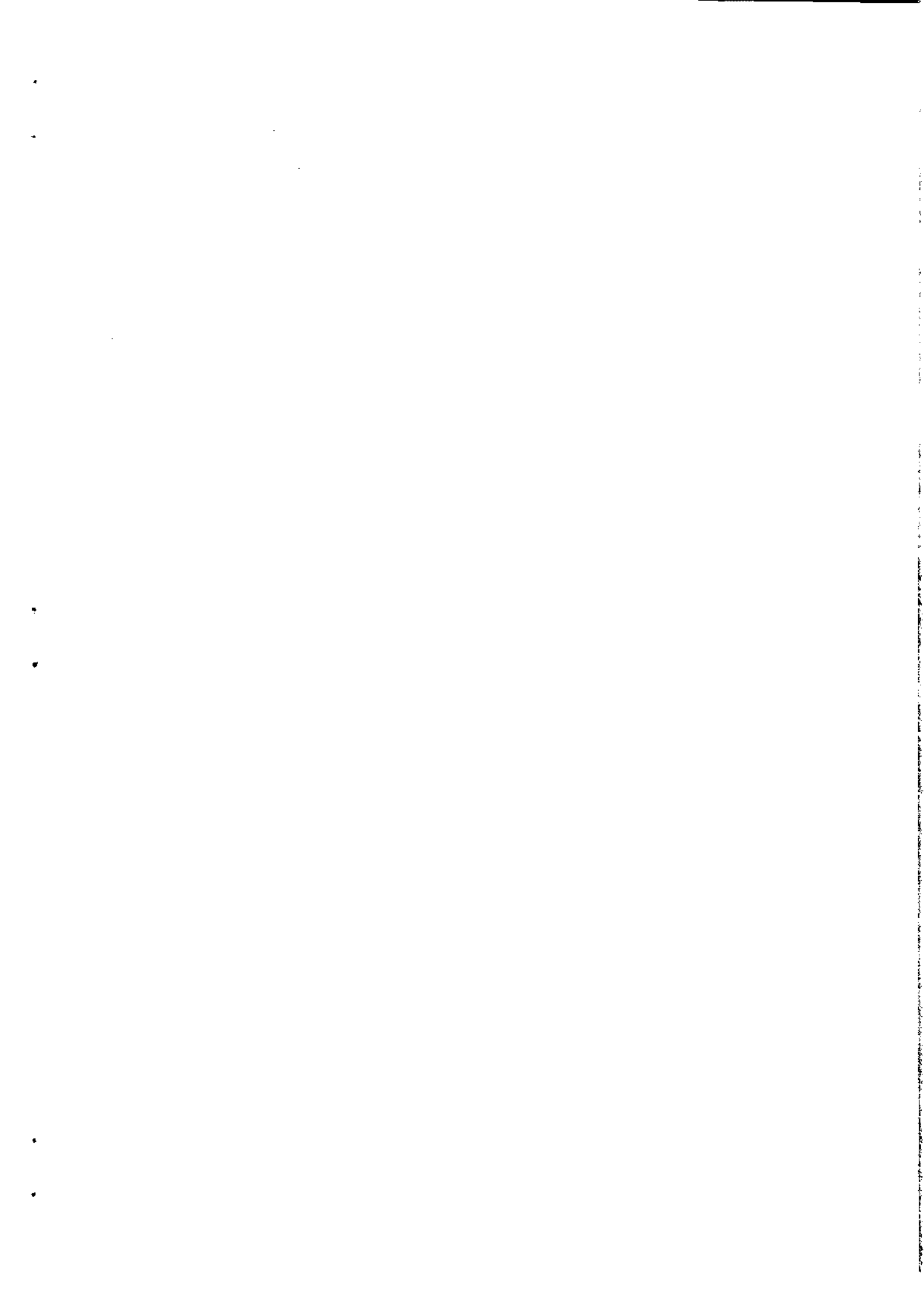


17620



17620





Bouée dérivante BODEGA n° 17621

Date début et position : 19/01/93 à 0.99°S ,156.04°E
Launch date and position
 Date fin et position : 16/11/1993 à 1.72°S , 153°E)
End date and position

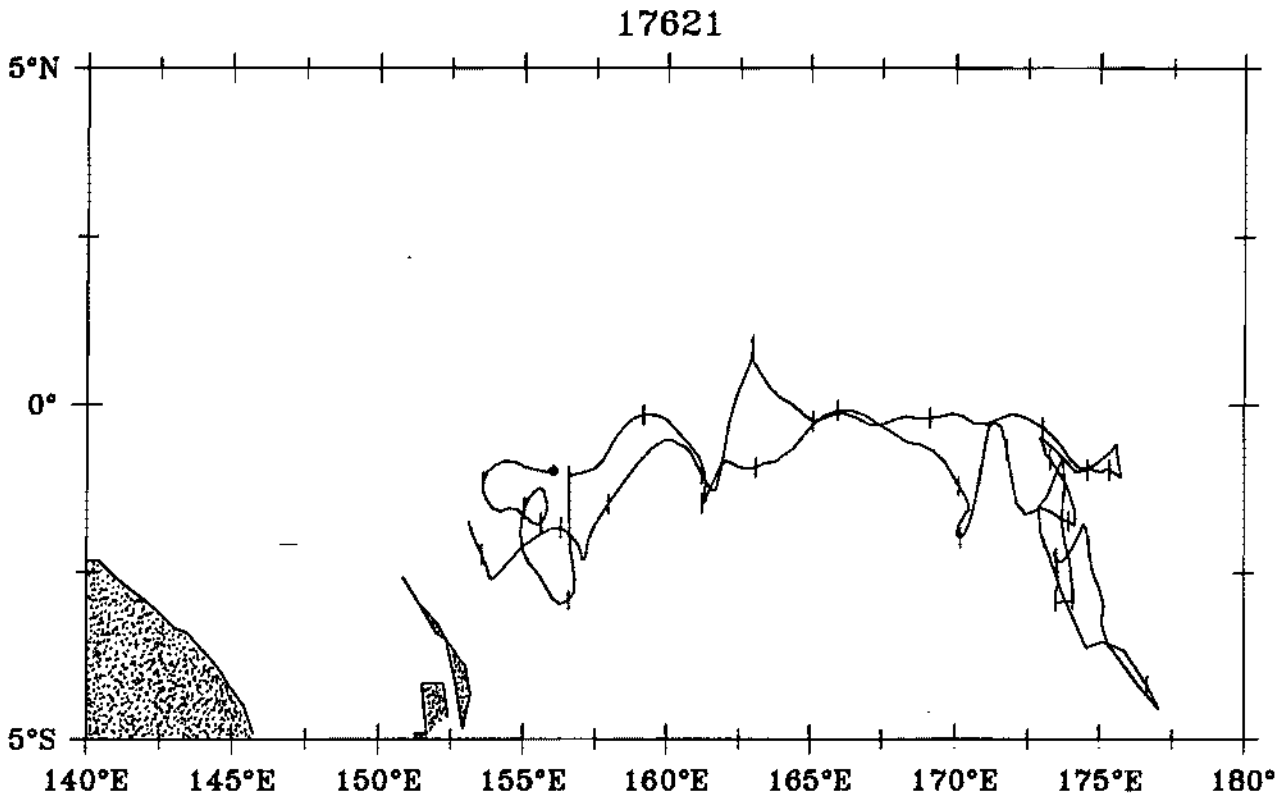
Perte de drogue le 13 juillet 1993. *Drogue off on July 13, 1993*

Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

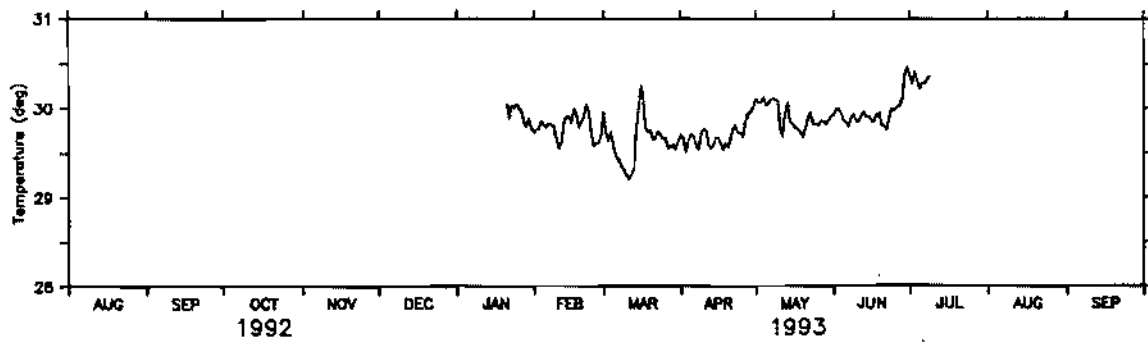
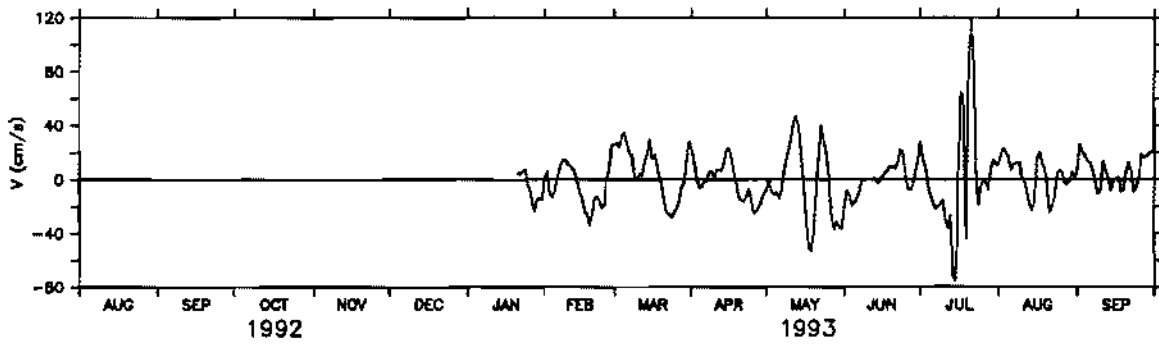
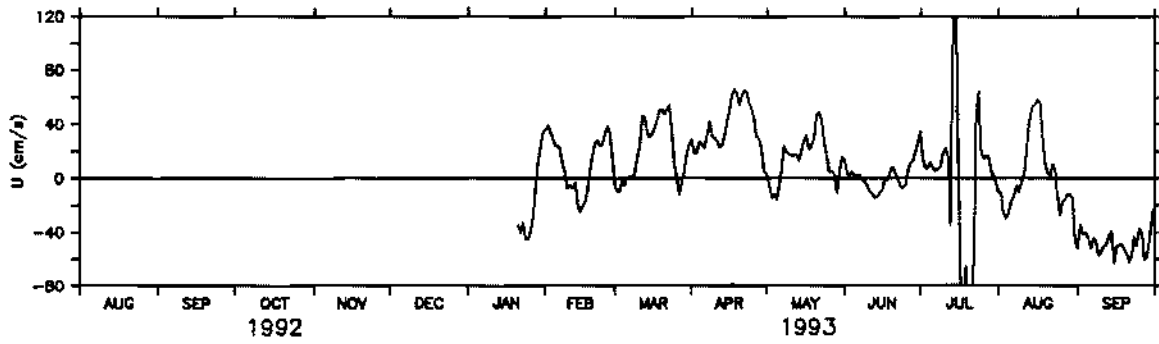
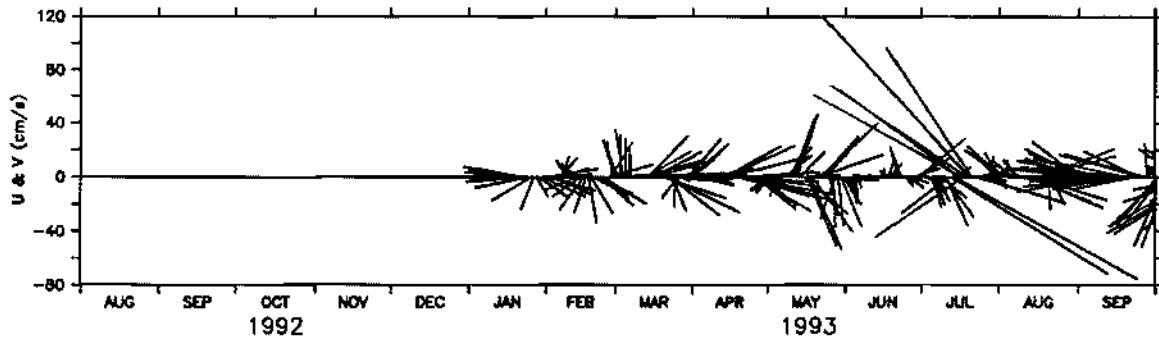
. cycle 1 (19/01/93) : -0.01 capteur 8m	. cycle 58 (17/03/93) : +0.02 capteur 12m
. cycle 22 (09/02/93) : -0.02 capteur 8m	. cycle 60 (21/03/93) : -0.23 capteur 8m
. cycle 27 (14/02/93) : -0.03 capteur 8m	+0.04 capteur 2m
. cycle 29 (29/02/93) : -0.04 capteur 8m	. cycle 61 (24/03/93) : -0.27 capteur 8m
. cycle 34 (21/02/93) : -0.05 capteur 8m	. cycle 64 (02/04/93) : -0.38 capteur 8m
. cycle 36 (23/02/93) : -0.05 capteur 8m	. cycle 71 (23/04/93) : -0.52 capteur 8m
. cycle 37 (24/02/93) : -0.06 capteur 8m	-0.24 capteur 20m
. cycle 40 (27/02/93) : -0.08 capteur 8m	. cycle 75 (05/05/93) : +0.04 capteur 5m
. cycle 44 (03/03/93) : -0.10 capteur 8m	. cycle 88 (10/06/93) : +0.28 capteur 5m
. cycle 46 (05/03/93) : -0.12 capteur 8m	-1.11 capteur 8m
. cycle 53 (12/03/93) : -0.15 capteur 8m	-0.21 capteur 12m
. cycle 54 (13/03/93) : -0.15 capteur 8m	-0.59 capteur 20m
. cycle 57 (16/03/93) : -0.17 capteur 8m	

Dérive du capteur 8m importante dès mars 93. Entre la mi-juillet et la fin juillet 1993, les positions sont rares, ce qui rend l'interpolation et le calcul des vitesses hasardeux et imprécis.

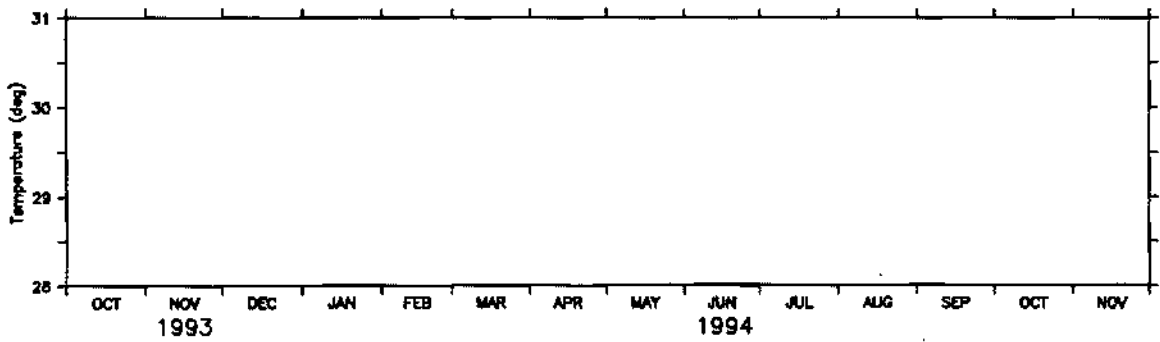
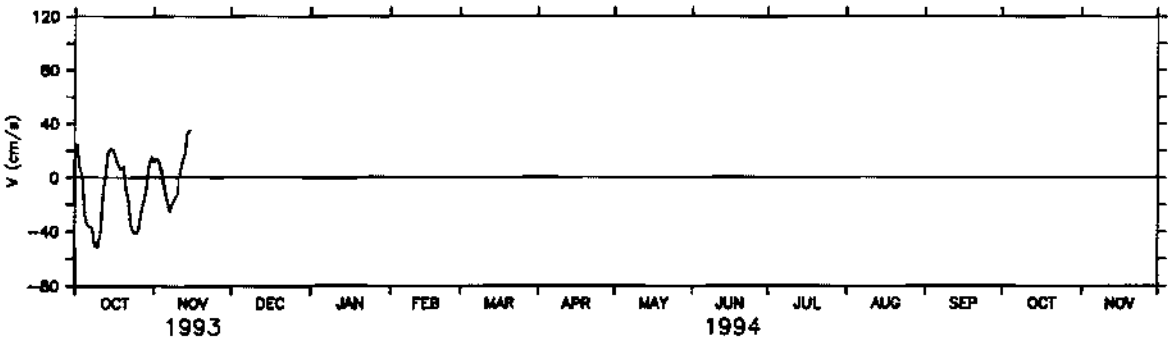
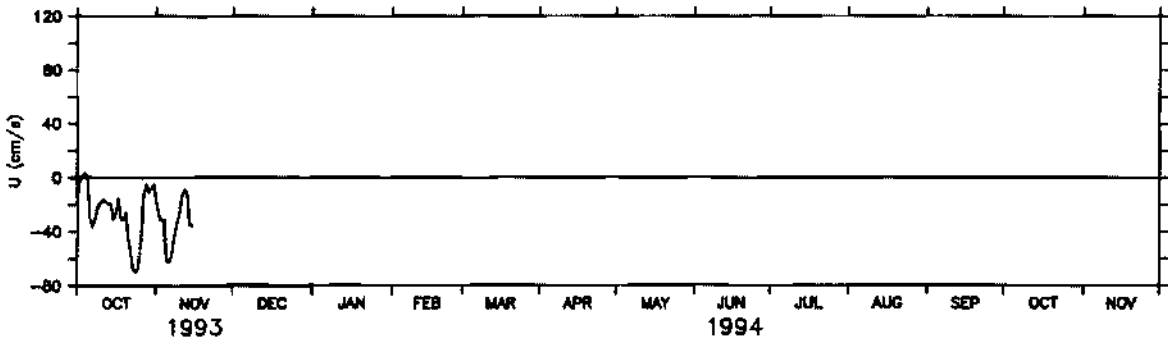
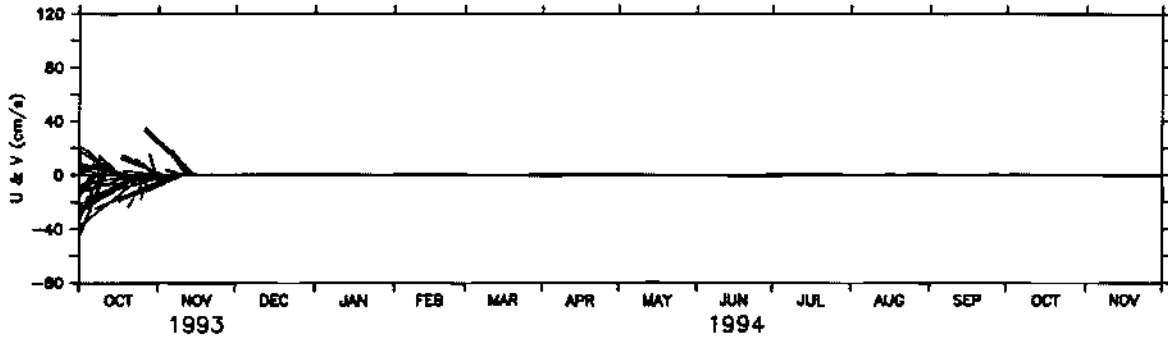
Important drift of 8m sensor beginning in March 1993. Between mid-July and end of July, there were only few ARGOS fixes, which makes interpolation and current speed calculation imprecise.



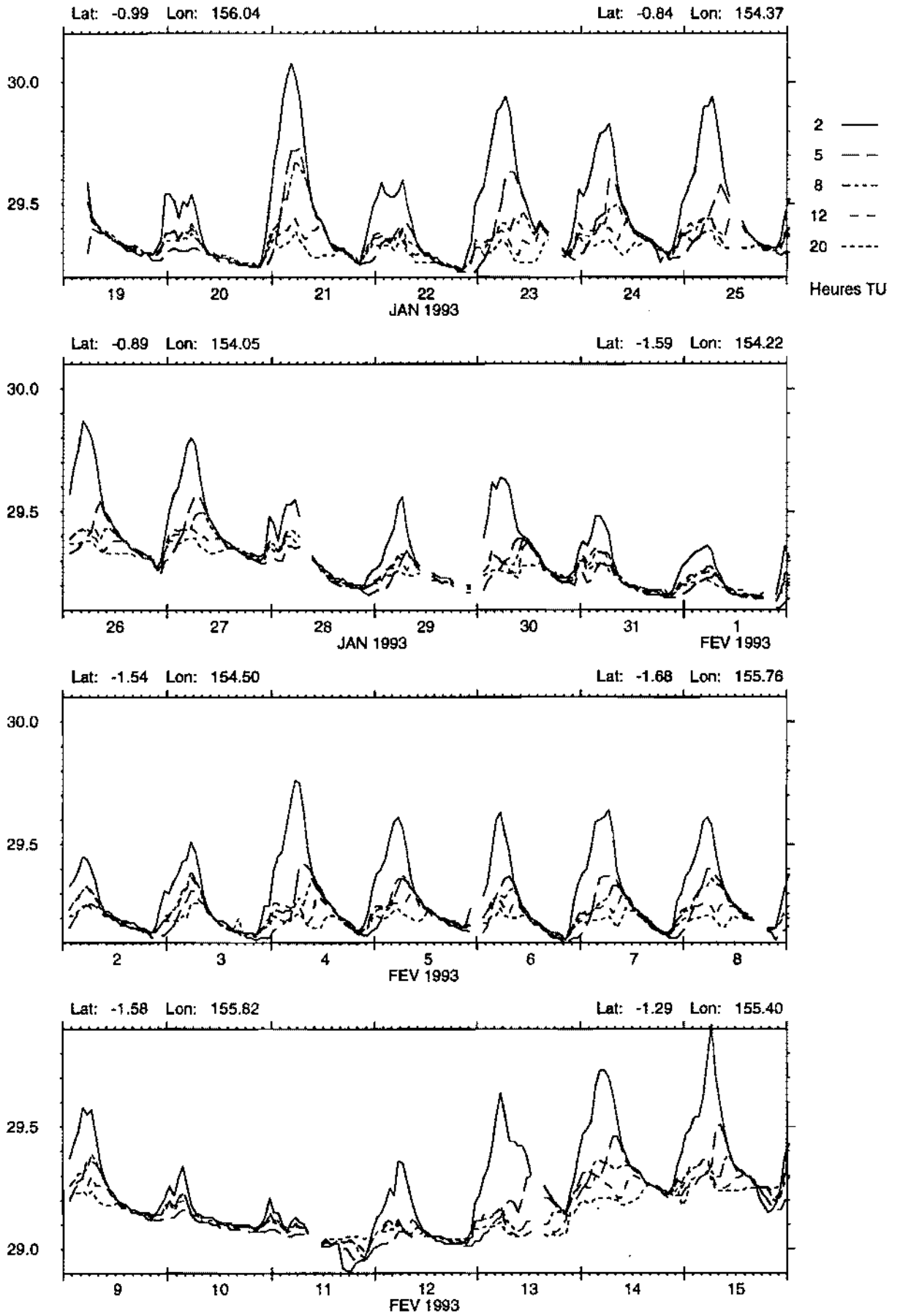
N°17621



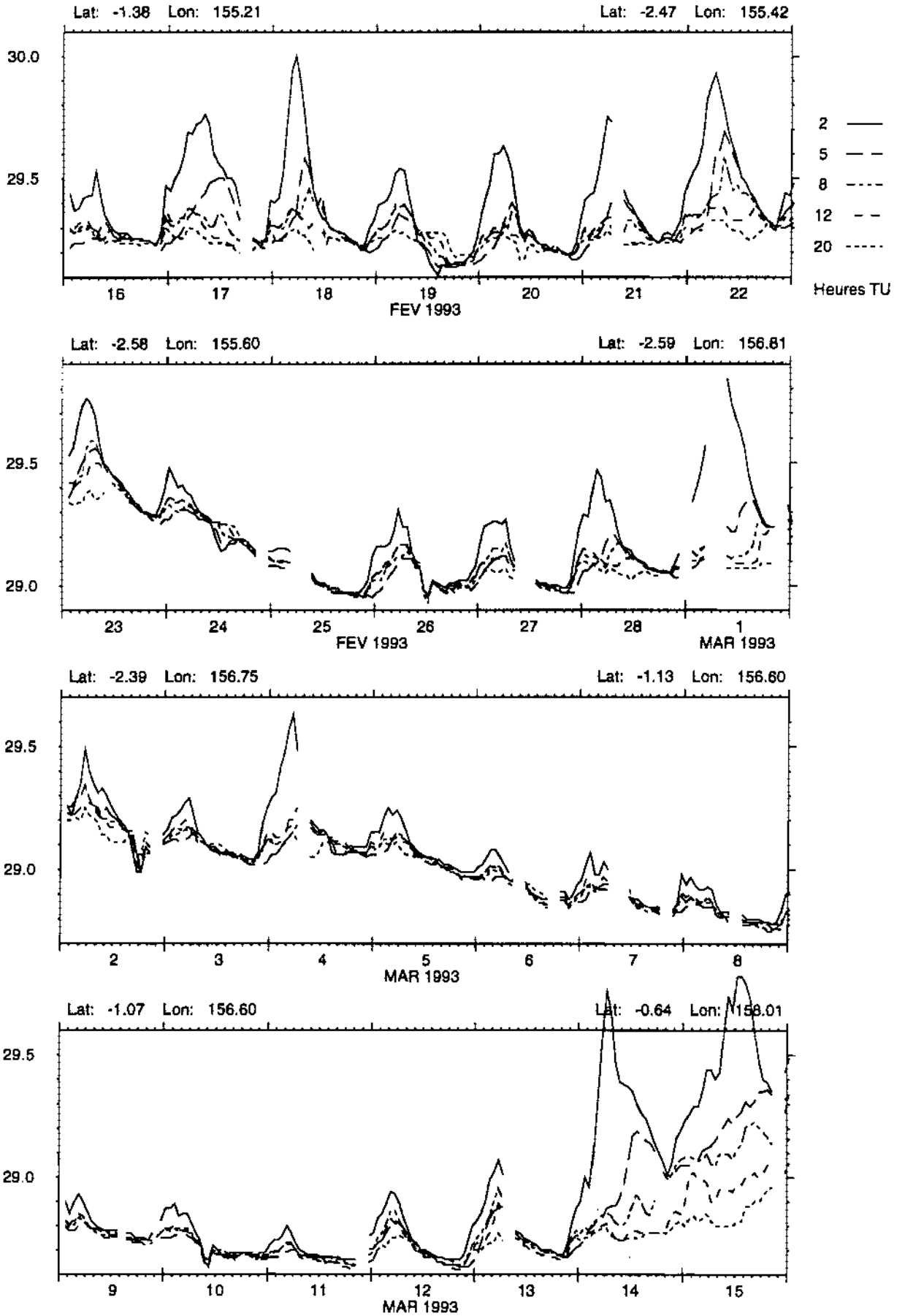
N°17621



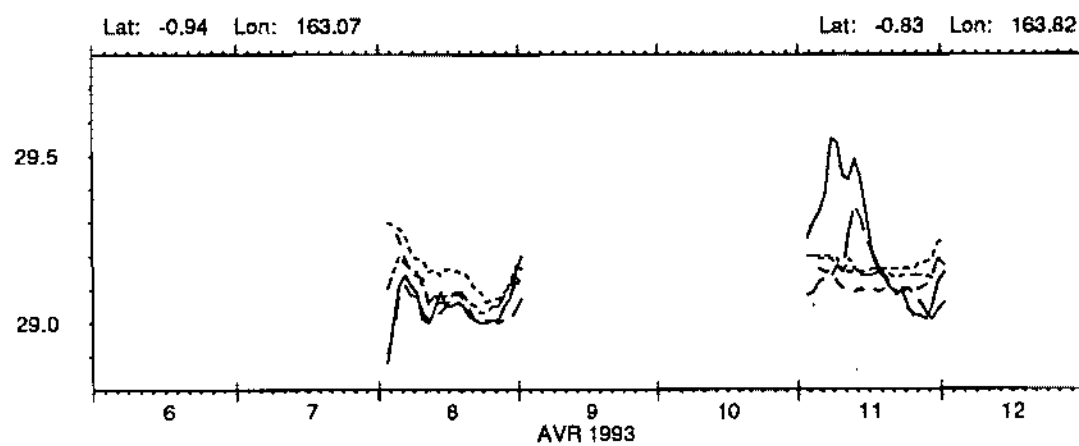
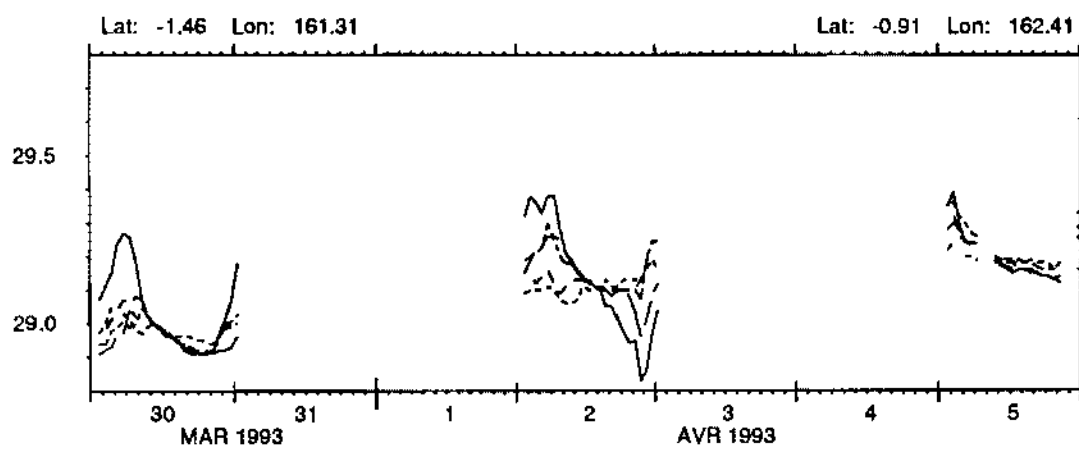
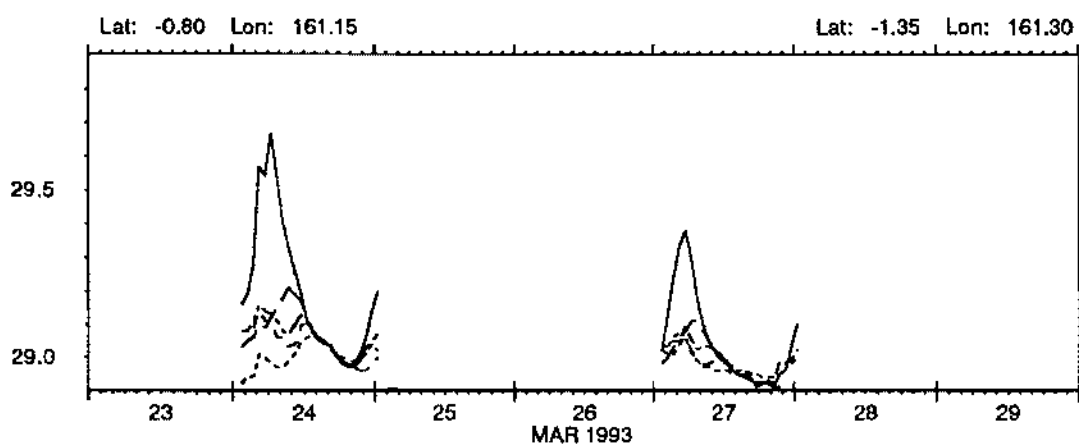
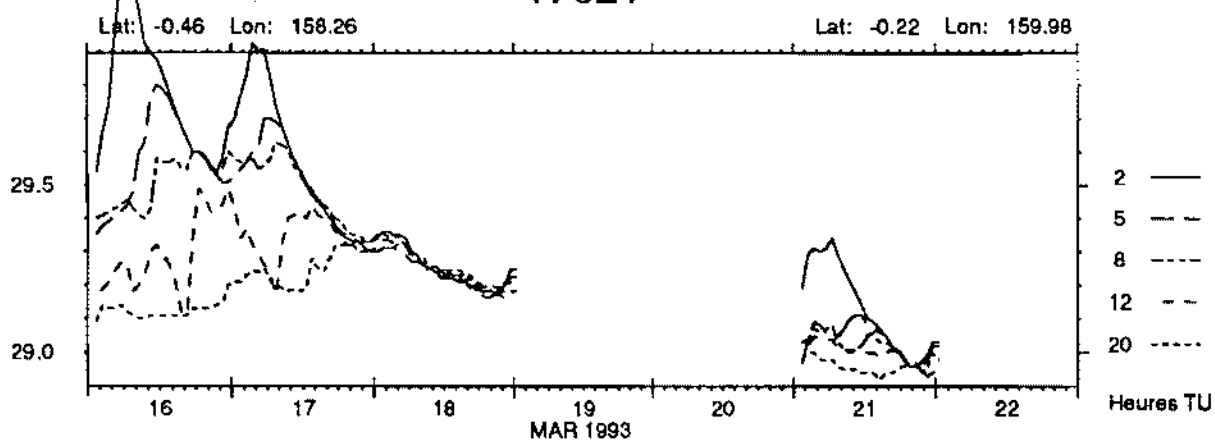
17621



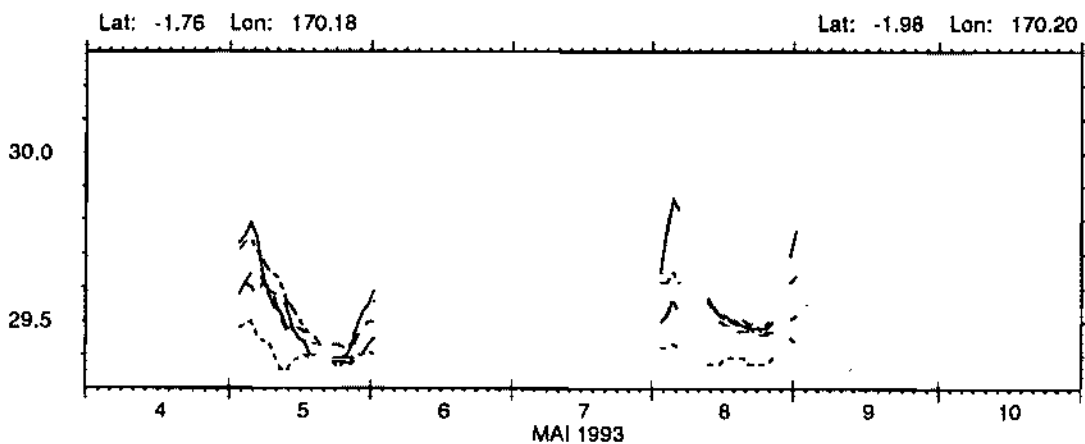
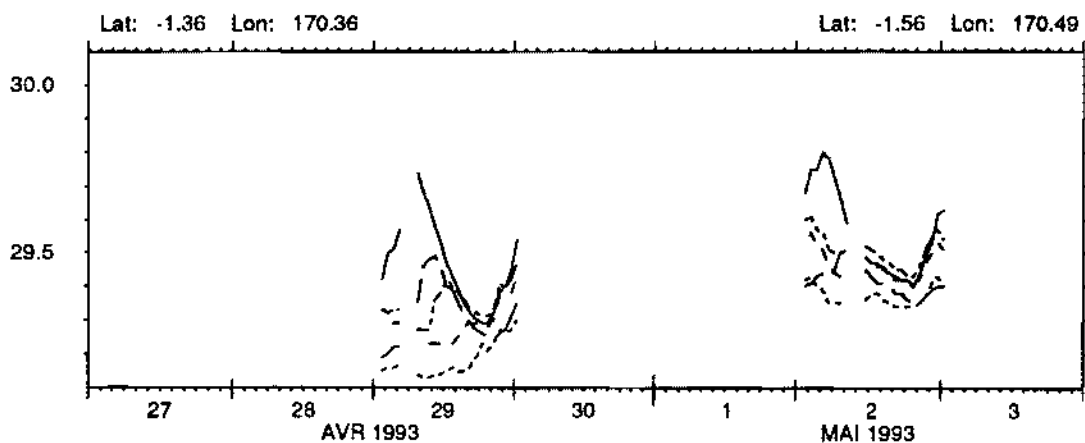
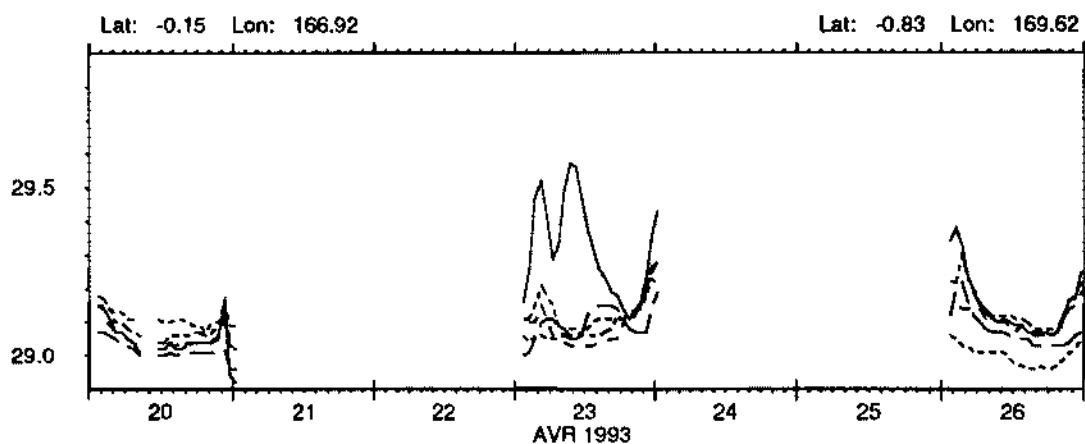
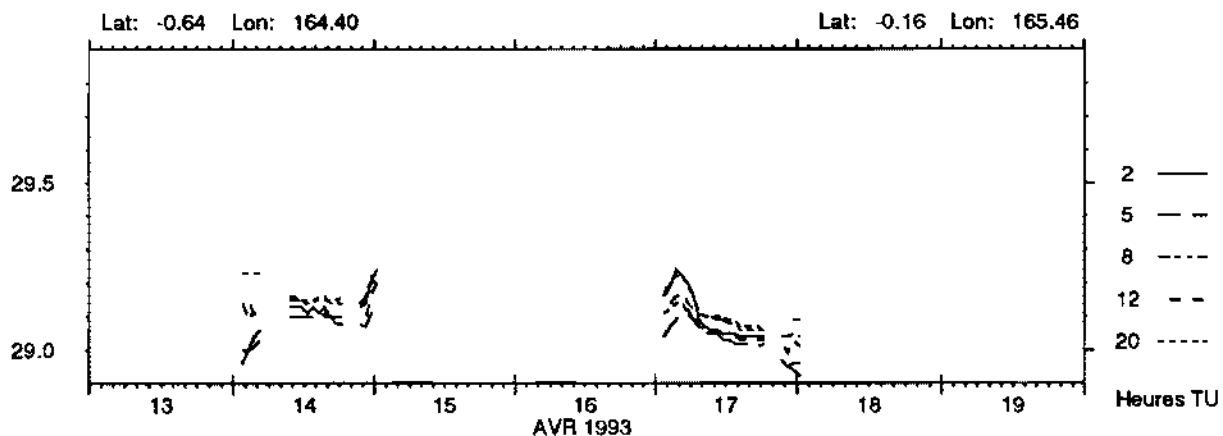
17621

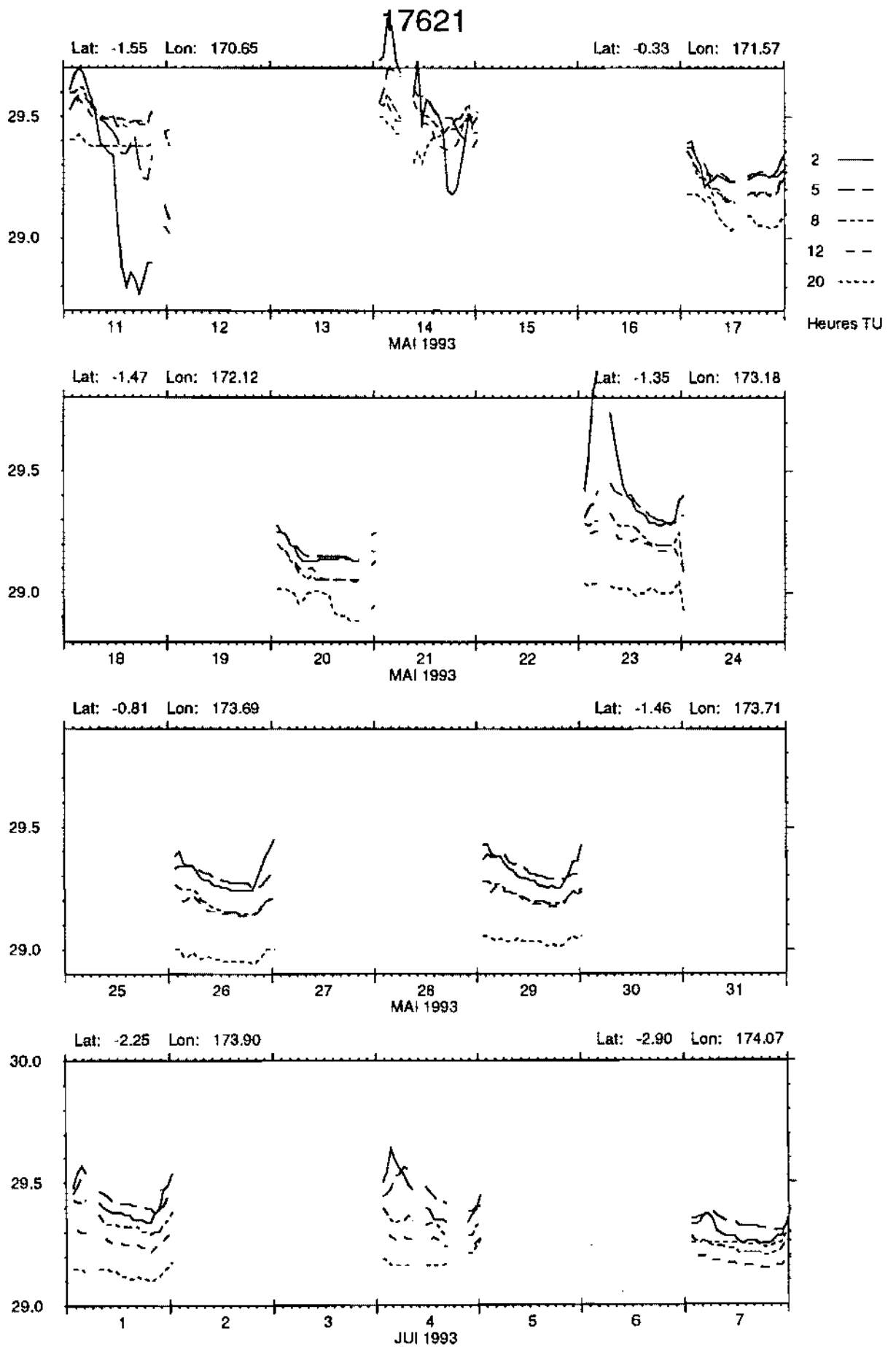


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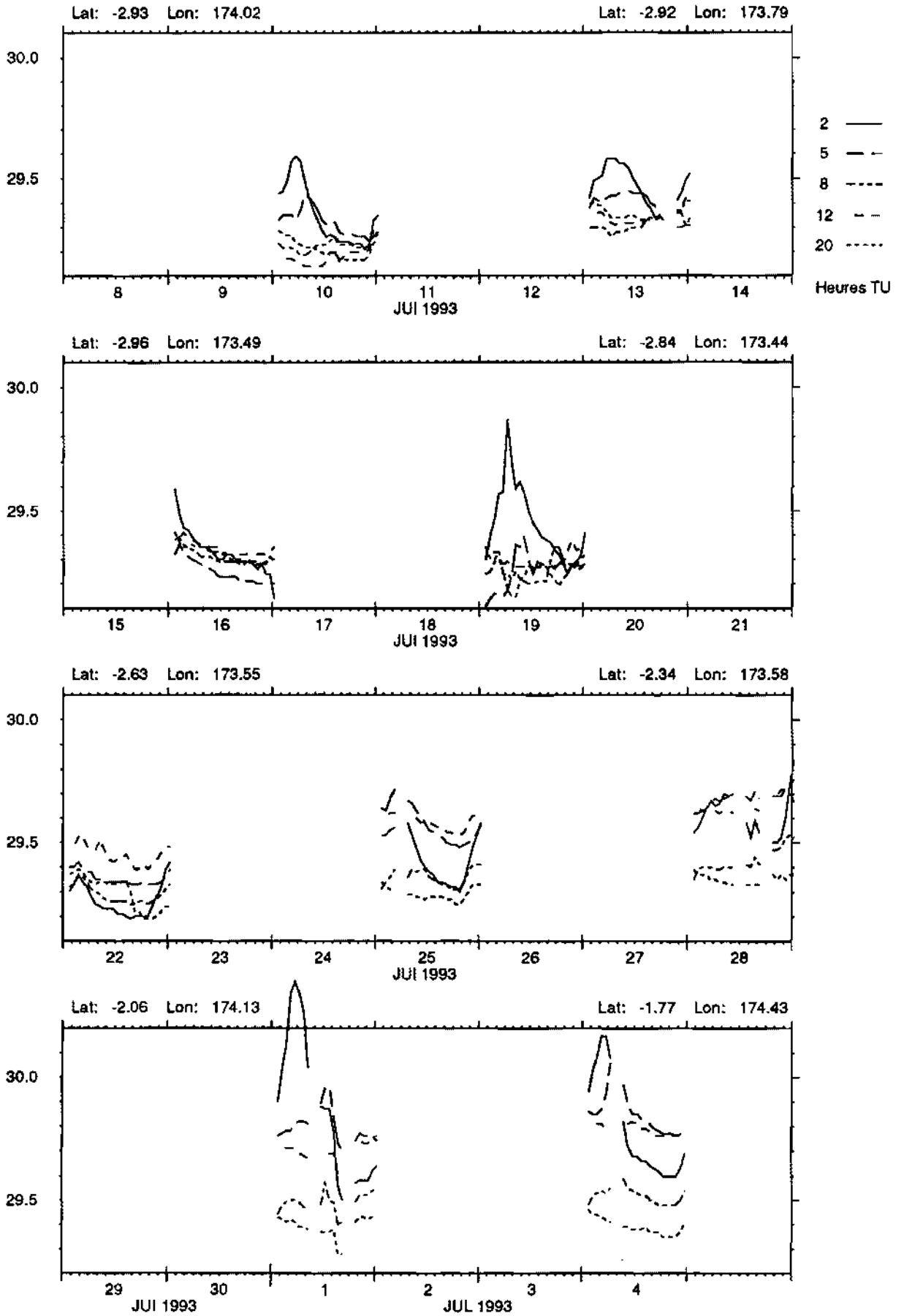


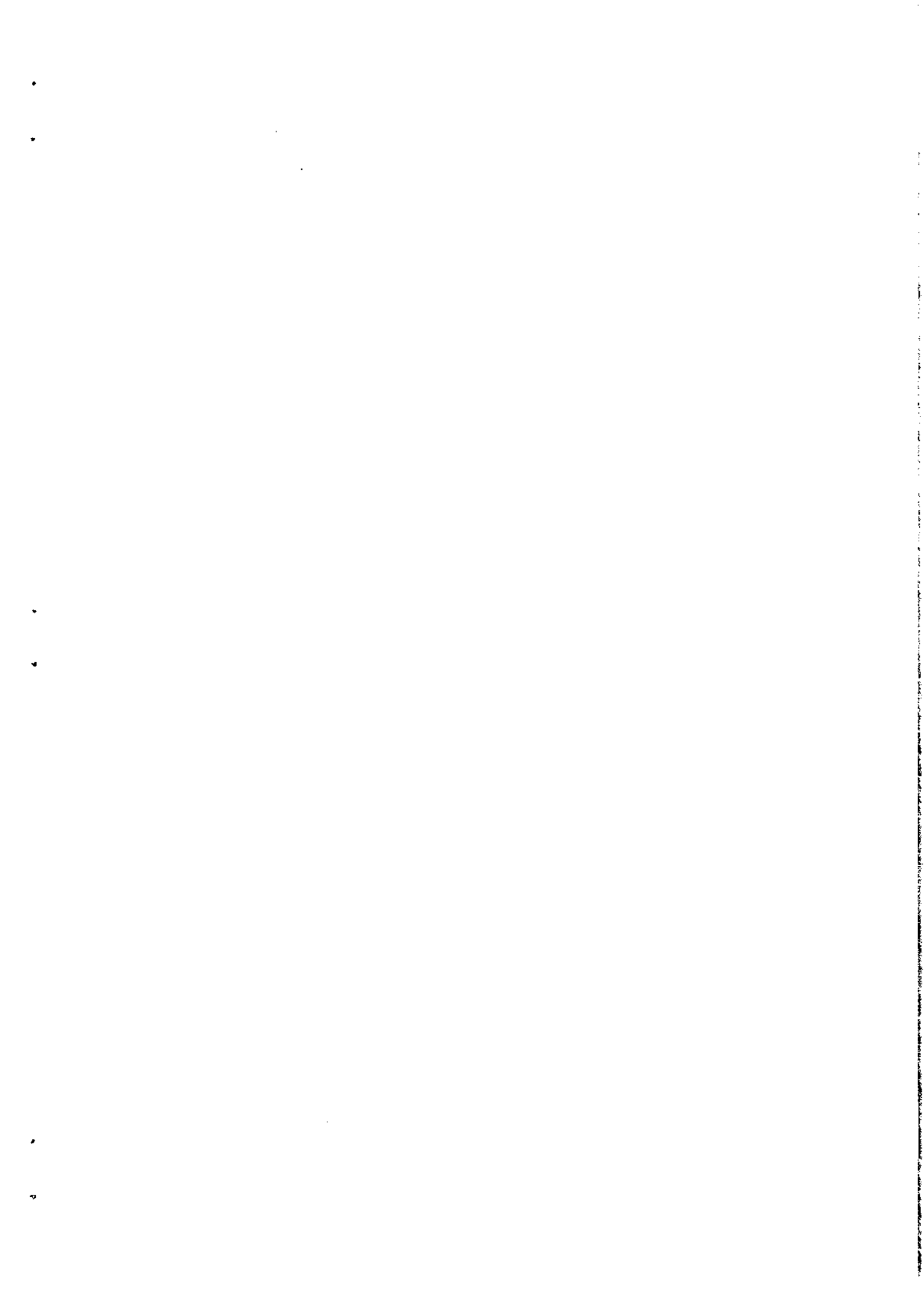
17621





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Bouée dérivante BODEGA n° 17622

Date début et position : 02/03/93 à 0.12°N, 154.10°E

Launch date and position

Date fin et position : 03/07/93 à 5.05°N, 153.32°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

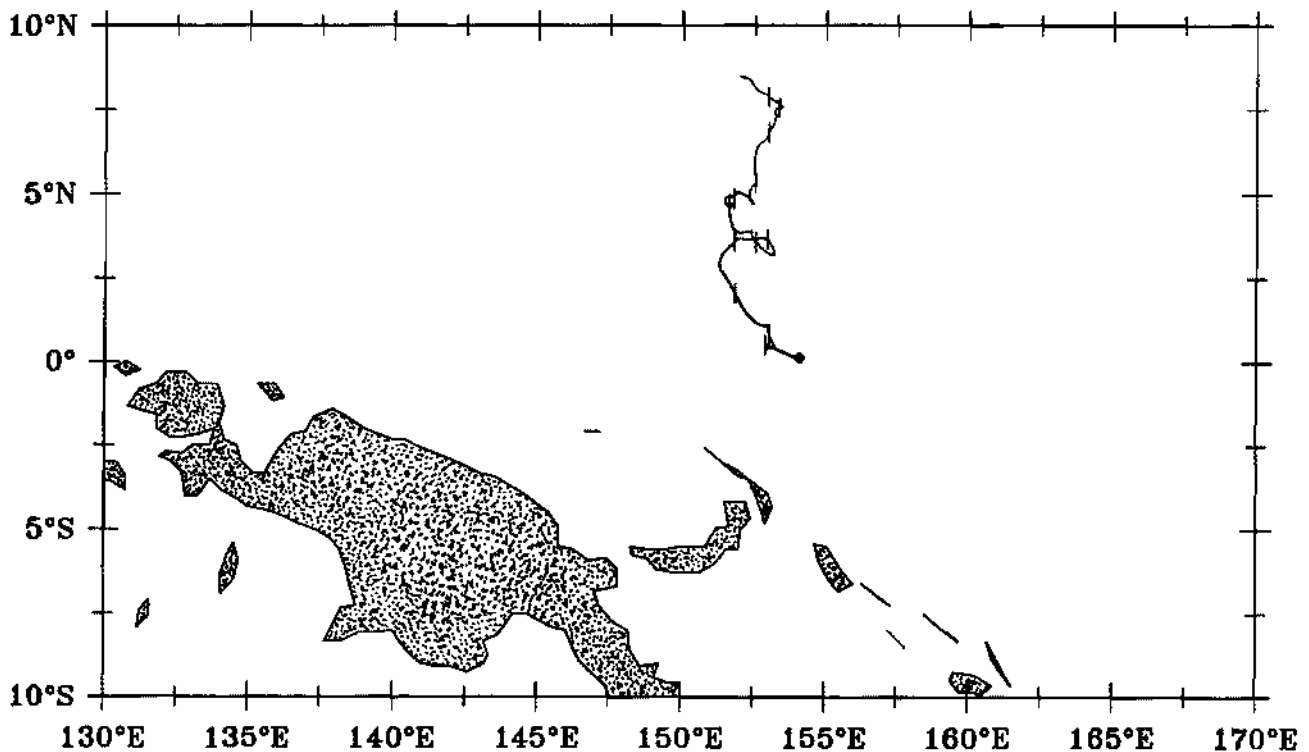
Proposed corrections to compensate sensor drifts

. cycle 2 (03/03/93) : +0.01 capteur 12m	. cycle 50 (22/05/93) : +1.01 capteur 12m
. cycle 16 (17/03/93) : +0.18 capteur 12m	. cycle 51 (25/05/93) : -0.09 capteur 20m
. cycle 26 (27/03/93) : +0.27 capteur 12m	. cycle 53 (31/05/93) : -0.15 capteur 20m
. cycle 27 (28/03/93) : -0.04 capteur 20m	. cycle 58 (15/06/93) : -0.05 capteur 20m
. cycle 28 (29/03/93) : -0.09 capteur 20m	. cycle 61 (24/06/93) : +1.41 capteur 12m
. cycle 32 (01/04/93) : -0.16 capteur 20m	
. cycle 41 (22/04/93) : -0.09 capteur 20m	
. cycle 44 (04/05/93) : +0.75 capteur 12m	
	-0.01 capteur 20m

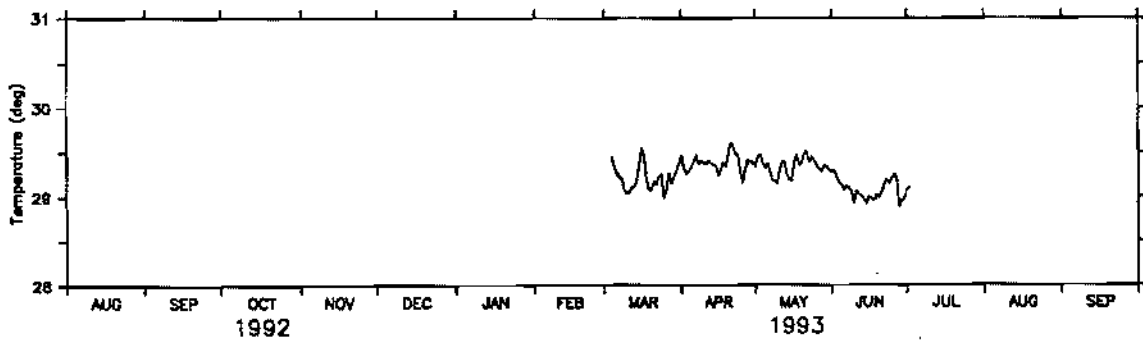
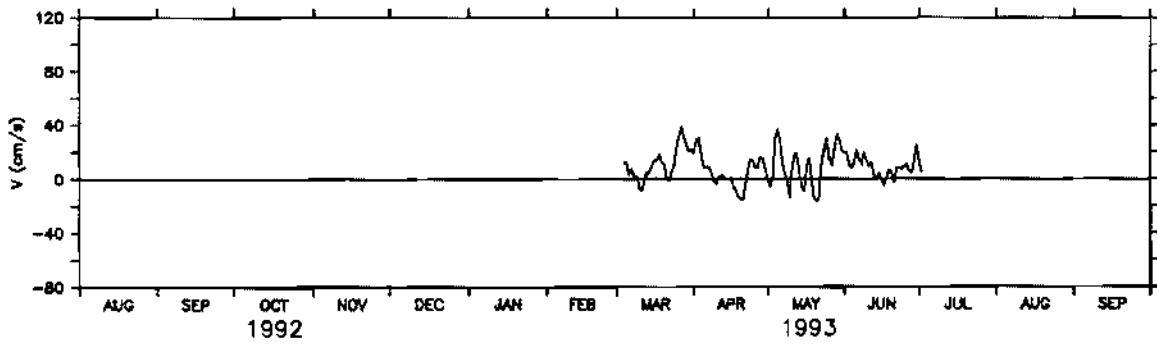
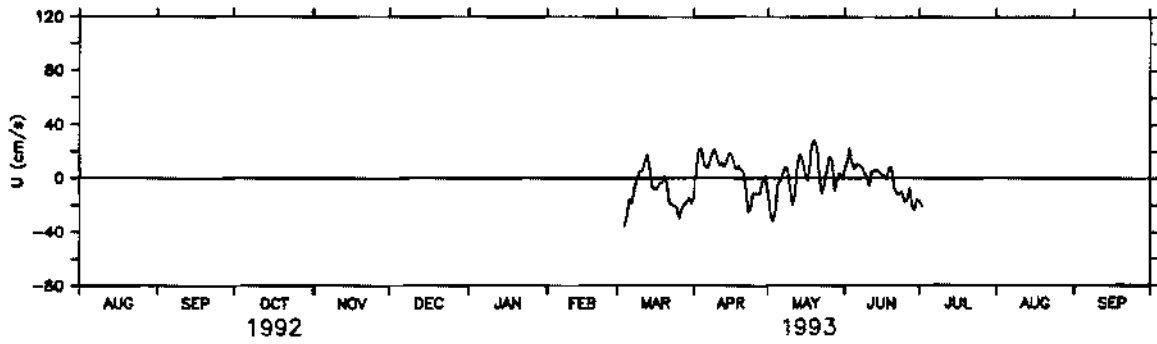
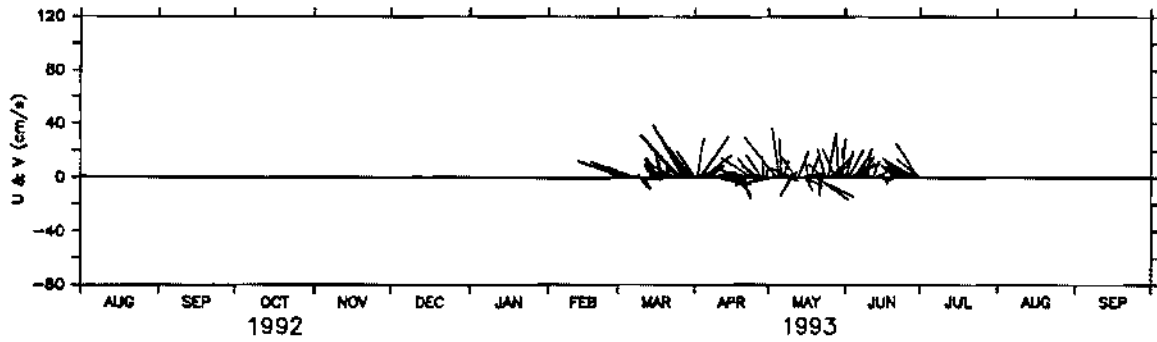
L'étalonnage avant déploiement des capteurs de cette bouée a montré une mauvaise qualité du capteur 12 mètres. Les dérives des capteurs de températures deviennent importante à partir de fin mai. Cette bouée a été déployée le 8/02/1993, mais les premières émissions reçues datent du 2 mars.

Calibration before deployment showed a poor quality of 12m sensor. This drifter was deployed on February 8, 1993 but the first positions received by ARGOS were on March 2, 1993.

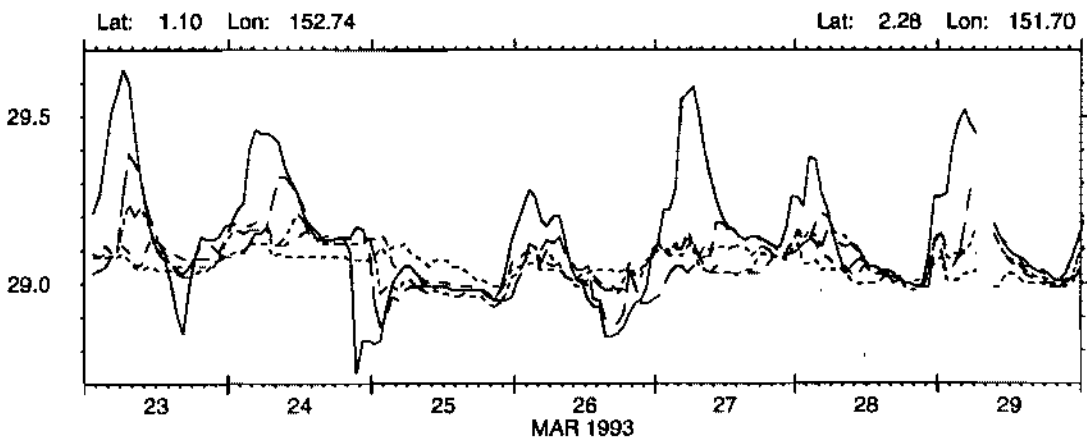
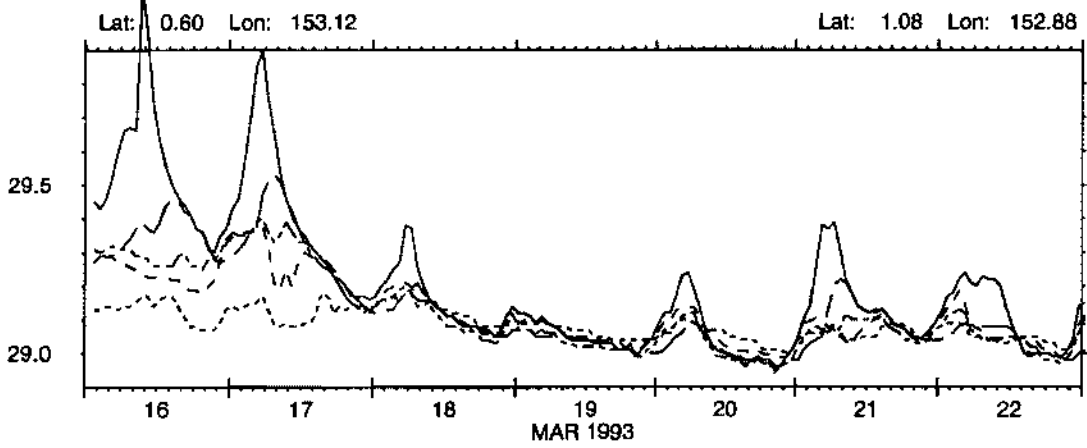
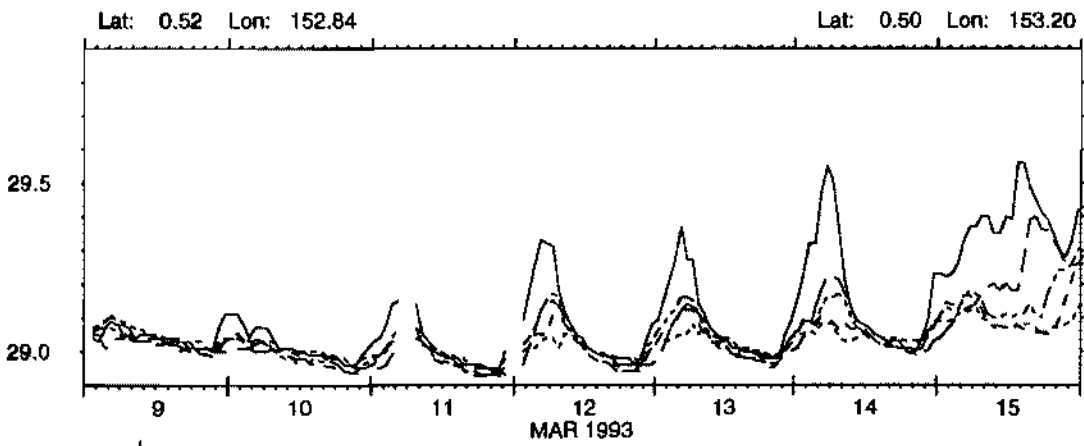
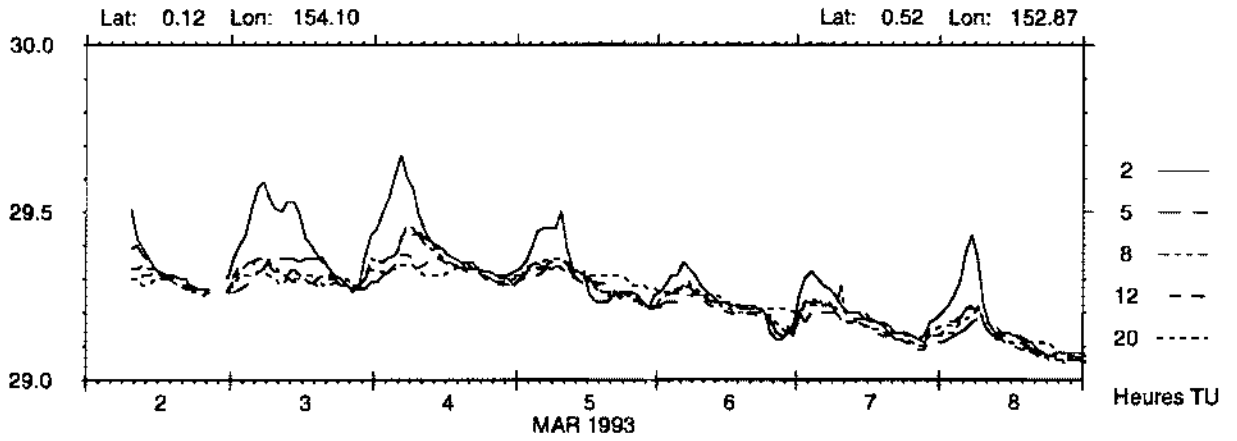
17622



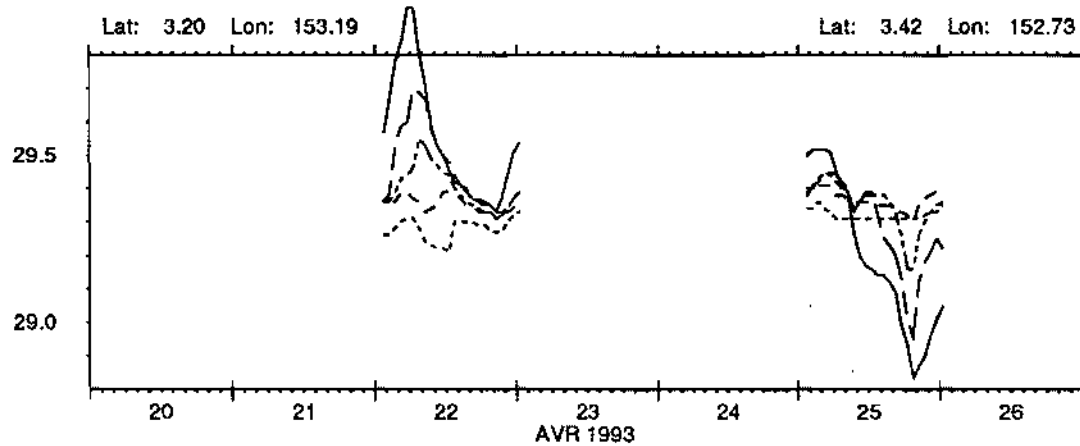
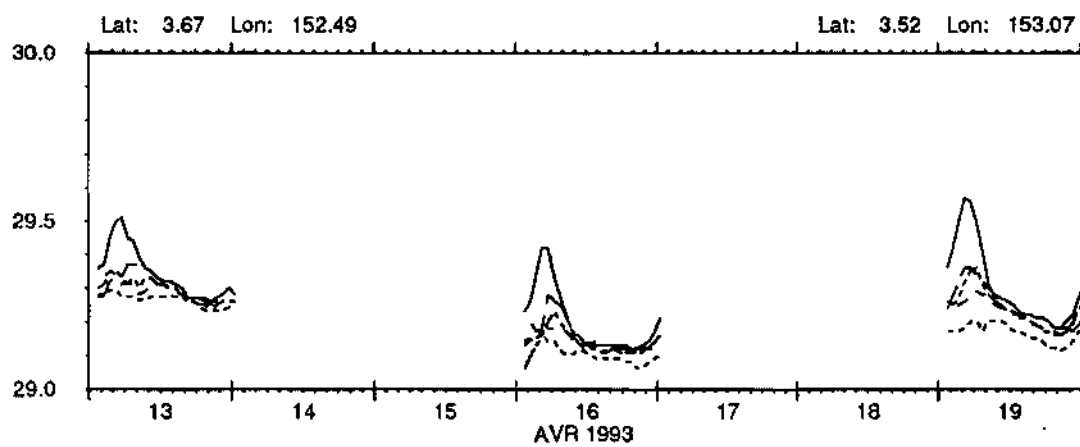
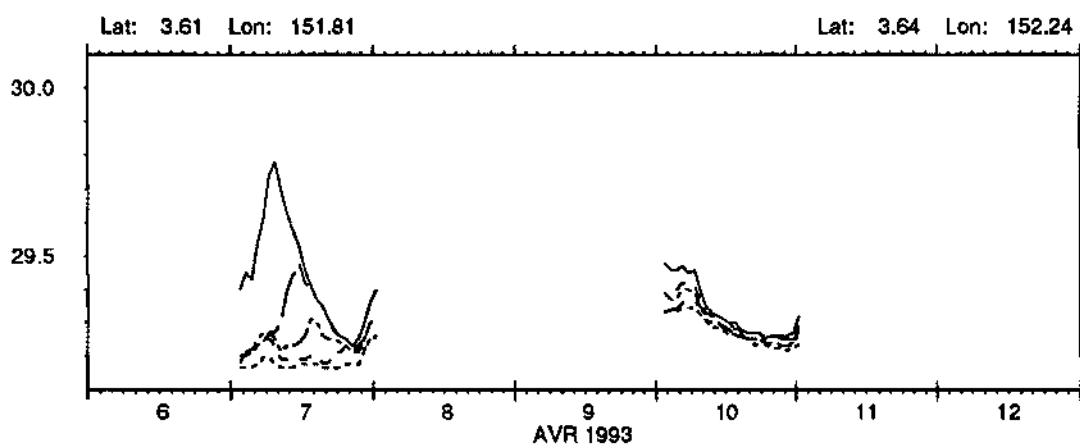
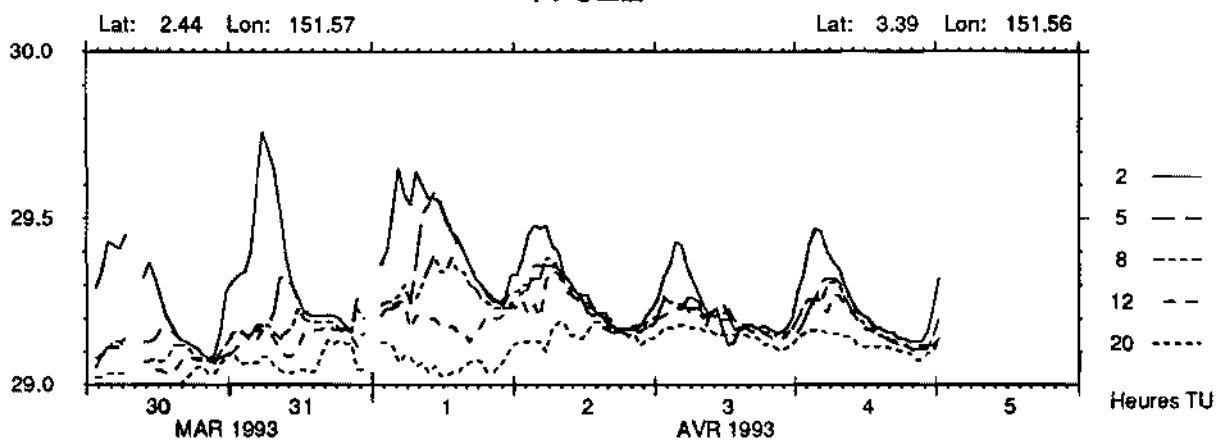
N°17622



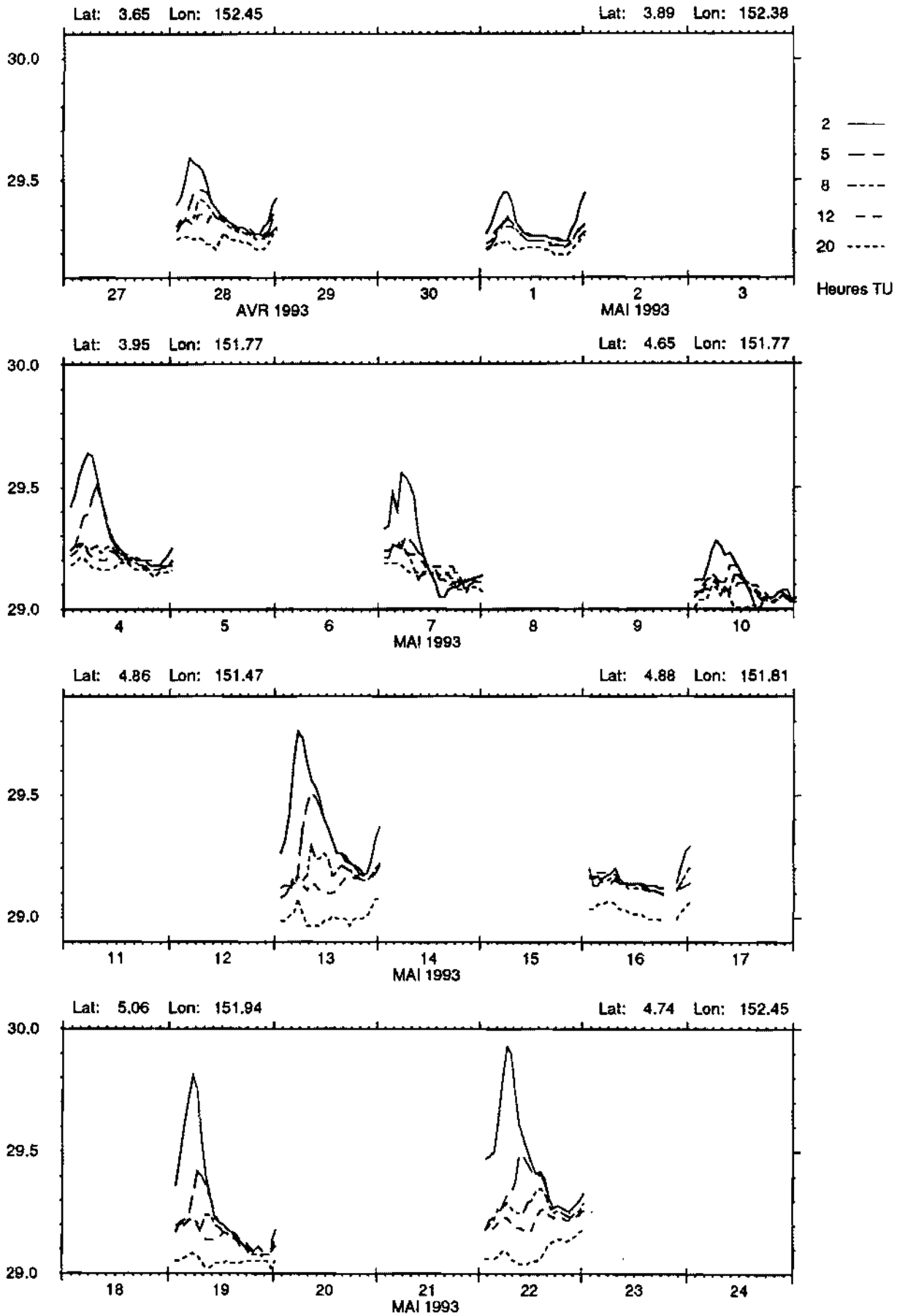
17622



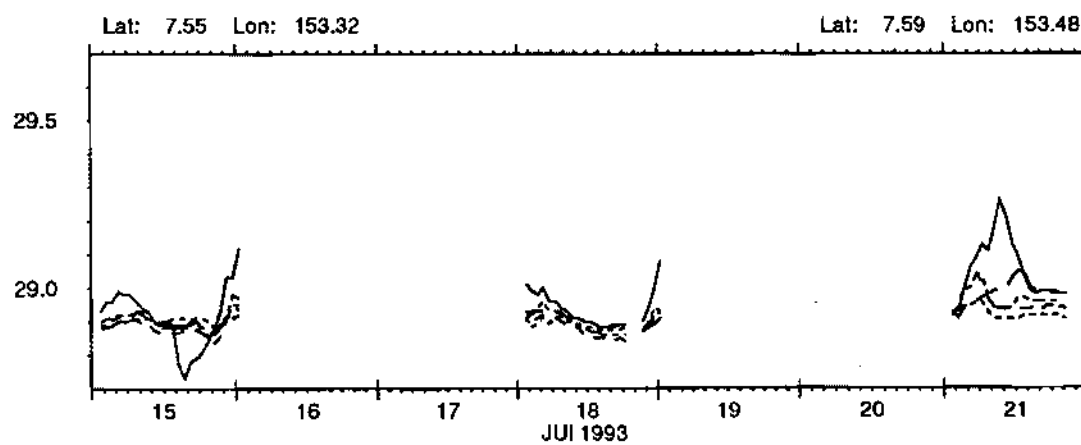
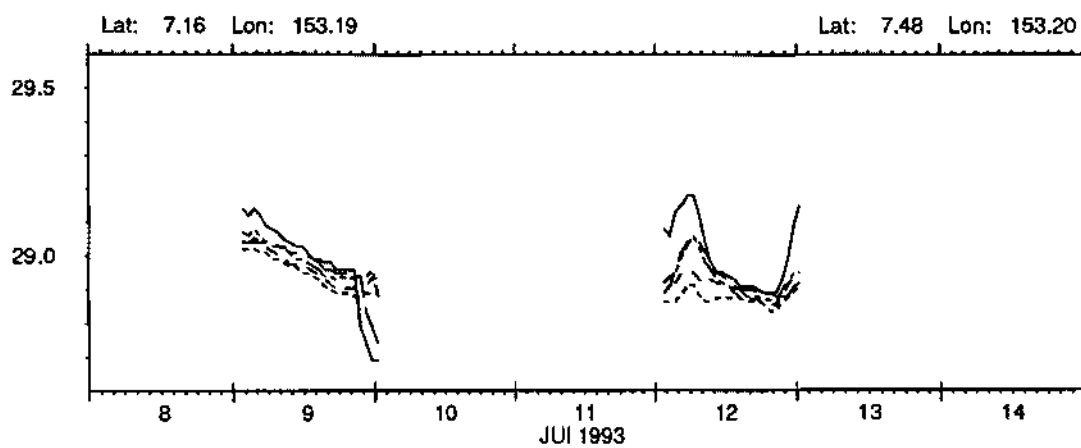
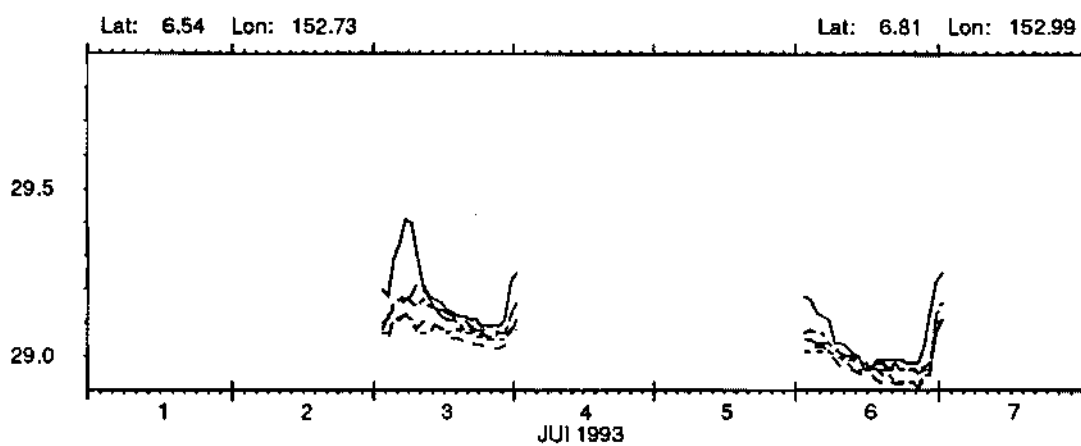
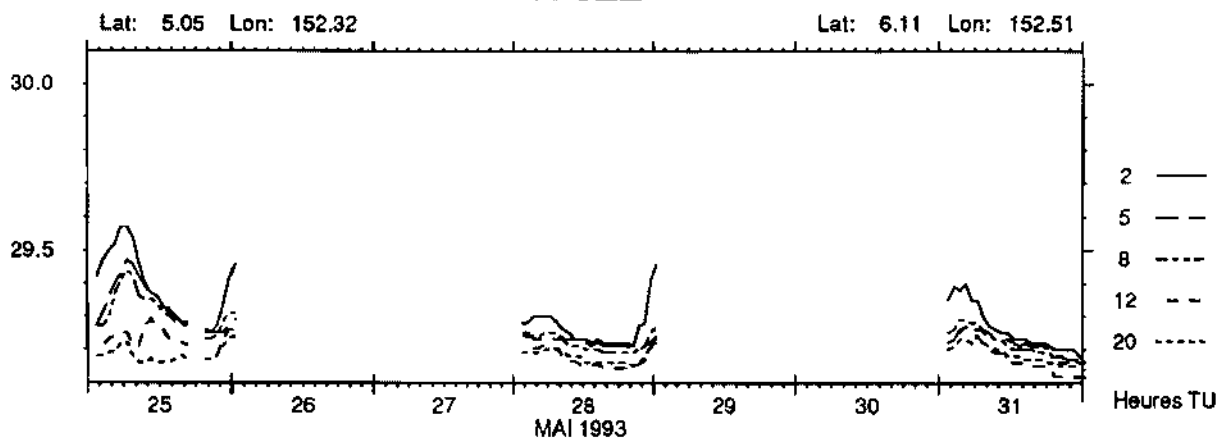
17622



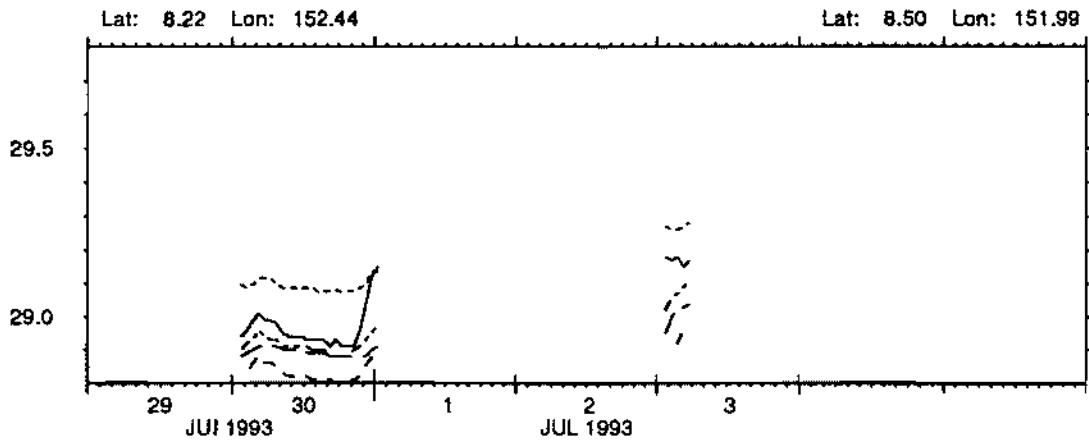
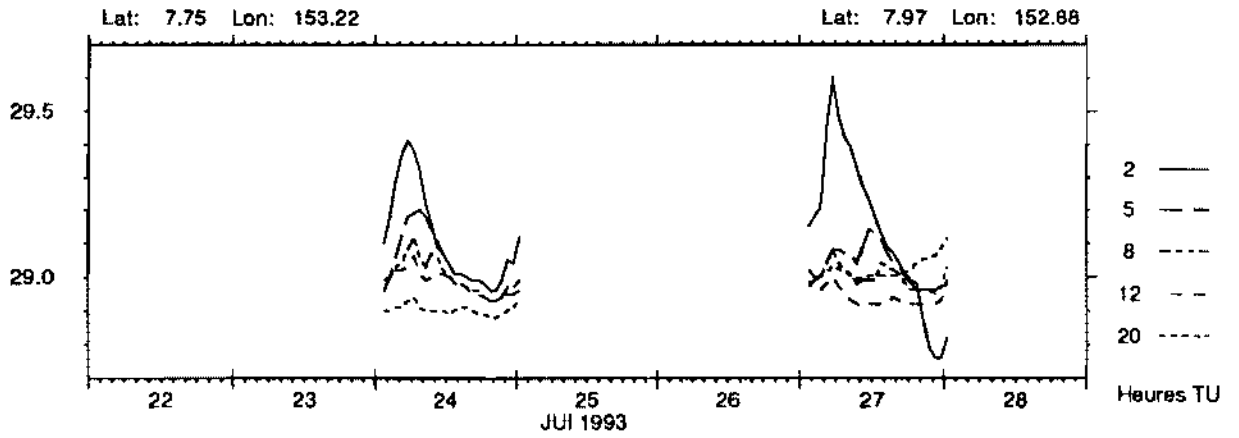
17622

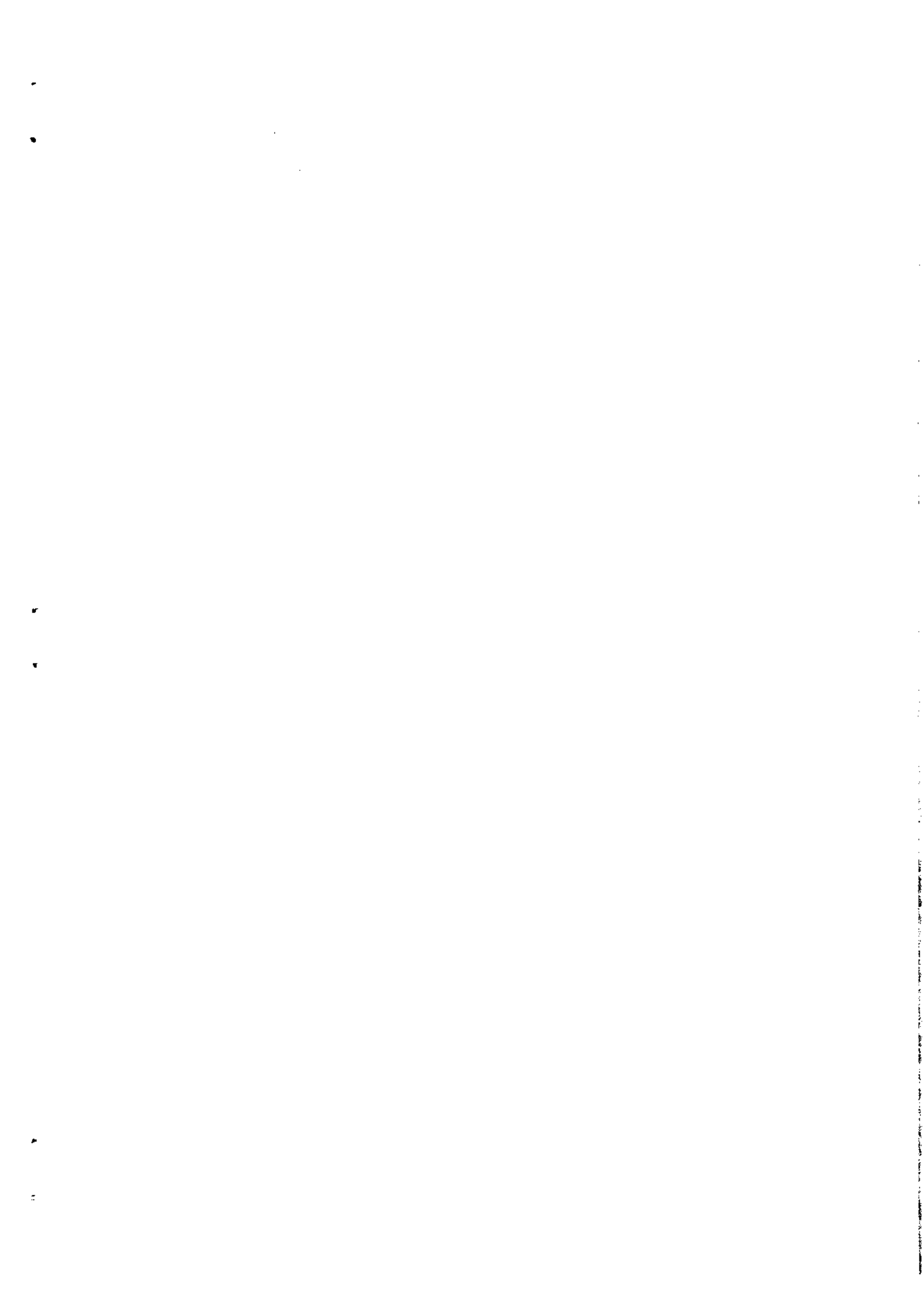


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Bouée dérivante BODEGA n° 17623

Date début et position: 20/12/92 à 1.99°N, 156.26°E

Launch date and position

Date fin et position 05/07/93 à 16.89°N, 142.68°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

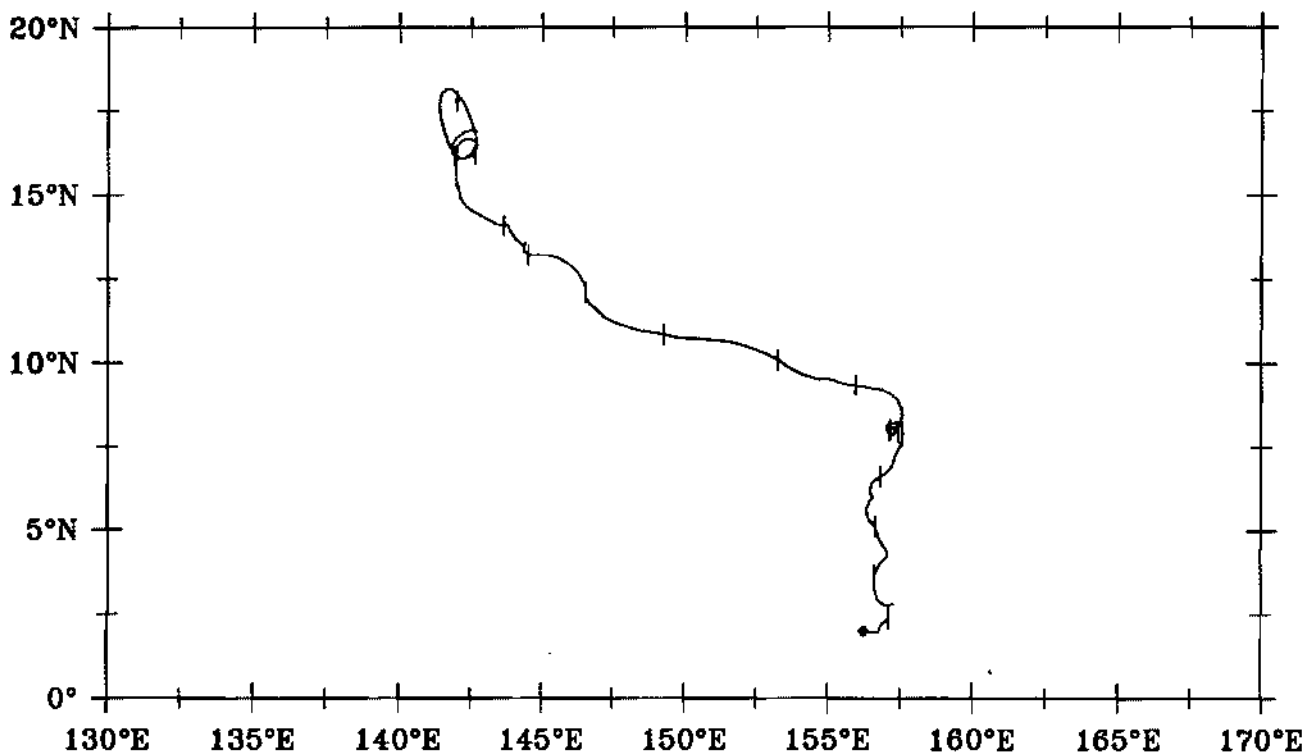
Proposed corrections to compensate sensor drifts

. cycle 62 (23/02/93) : -0.02 capteur 8m	. cycle 82 (24/04/93) : -0.04 capteur 20m
. cycle 66 (07/03/93) : -0.06 capteur 8m	. cycle 91 (21/05/93) : +0.03 capteur 5m
. cycle 70 (19/03/93) : -0.10 capteur 8m	+0.00 capteur 20m
. cycle 76 (06/04/93) : +0.01 capteur 5m	
-0.54 capteur 20m	
. cycle 79 (15/04/93) : +0.02 capteur 5m	
-0.15 capteur 8m	
-0.15 capteur 20m	

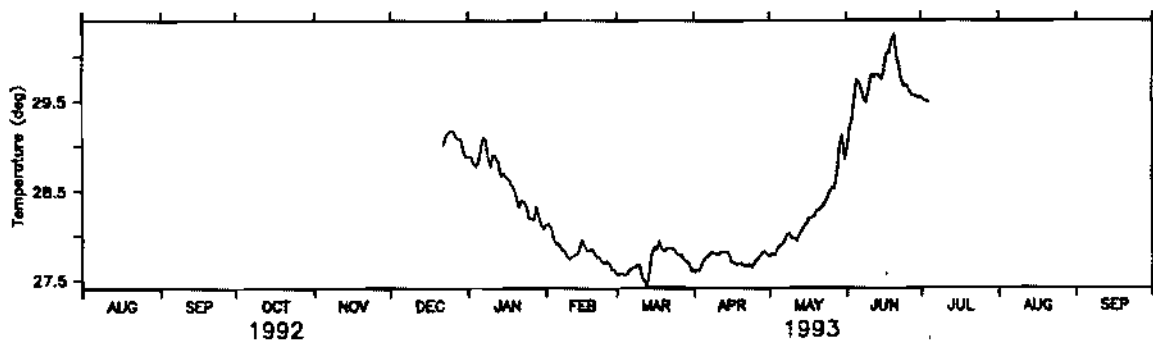
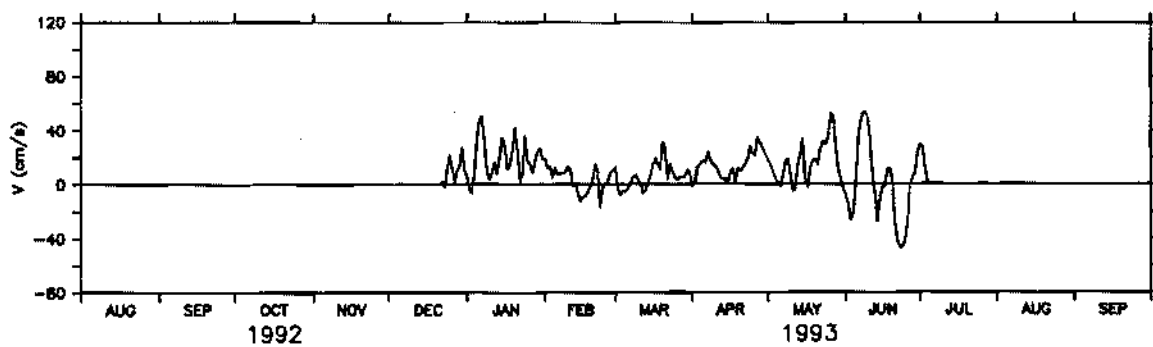
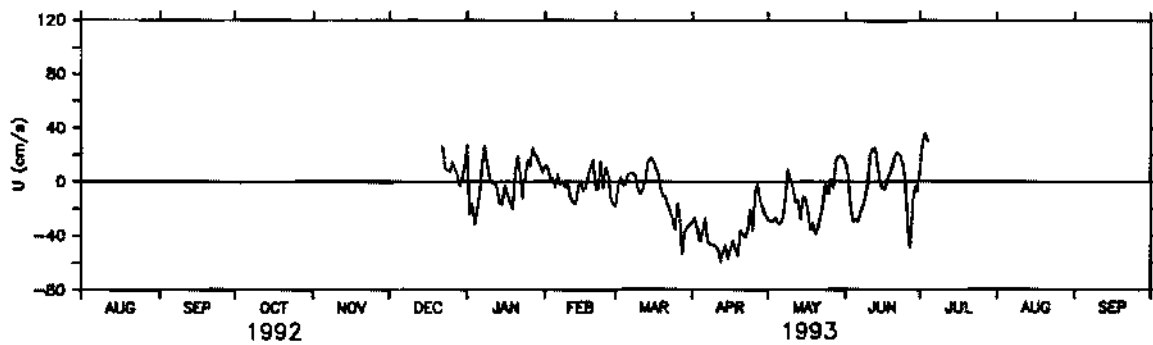
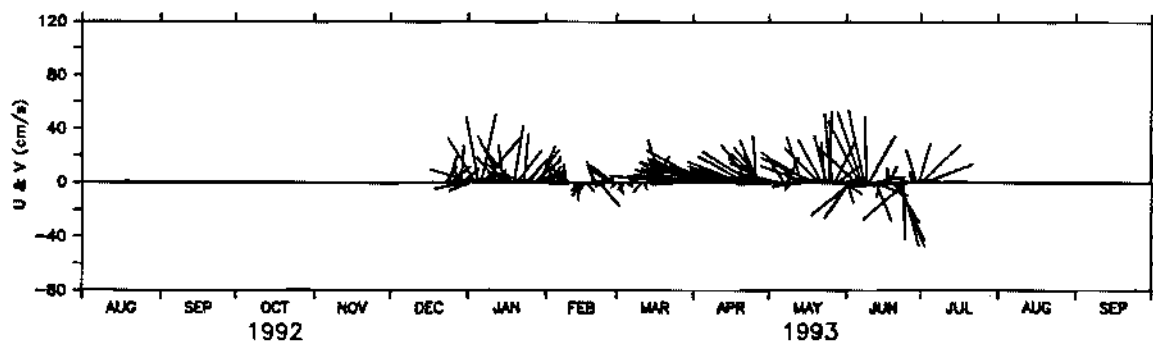
Le capteur 20m présente une dérive importante du 28 mars au 24 avril.

The sensor at 20m presents an important drift from March 28 through April 24, 1993.

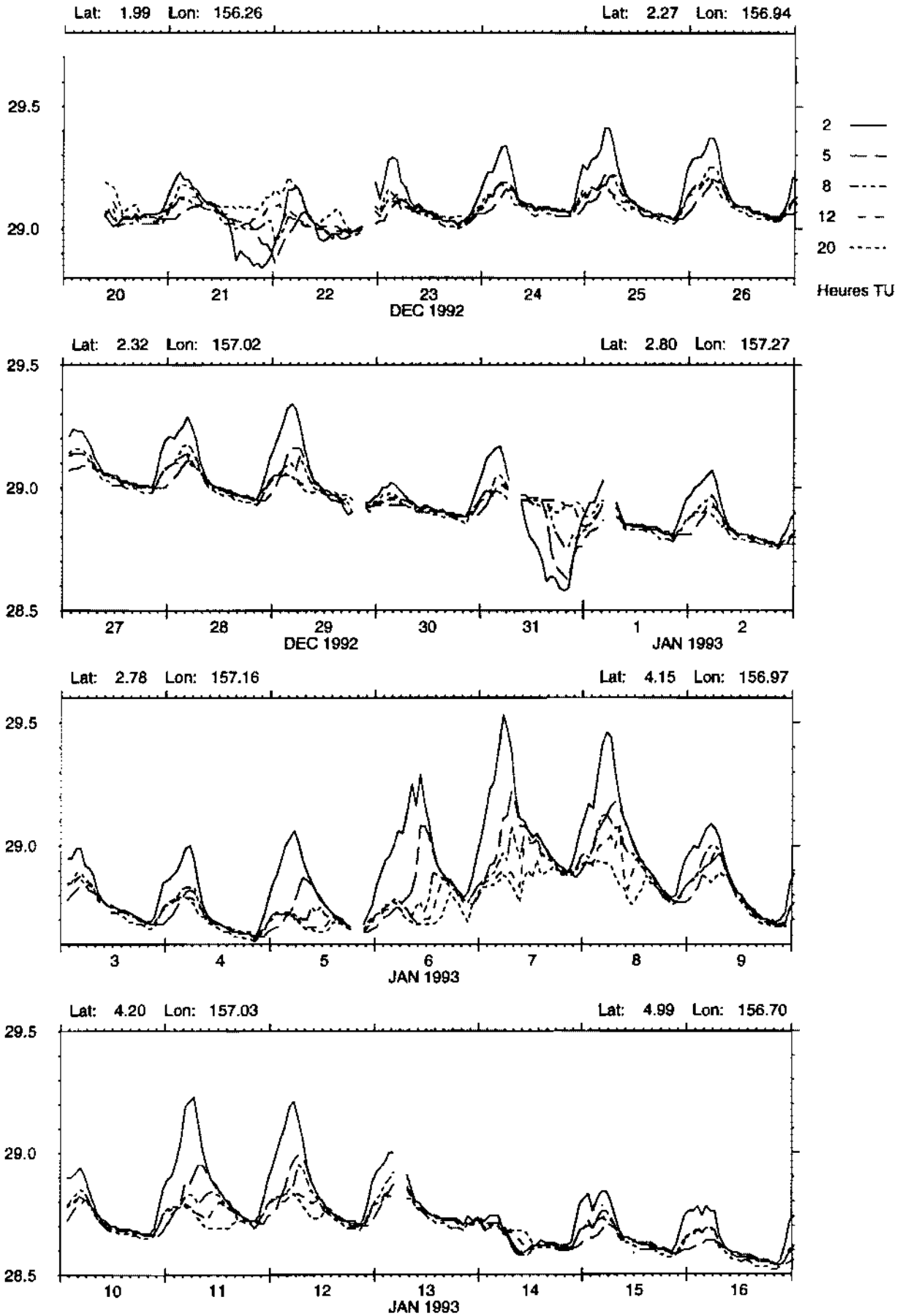
17623



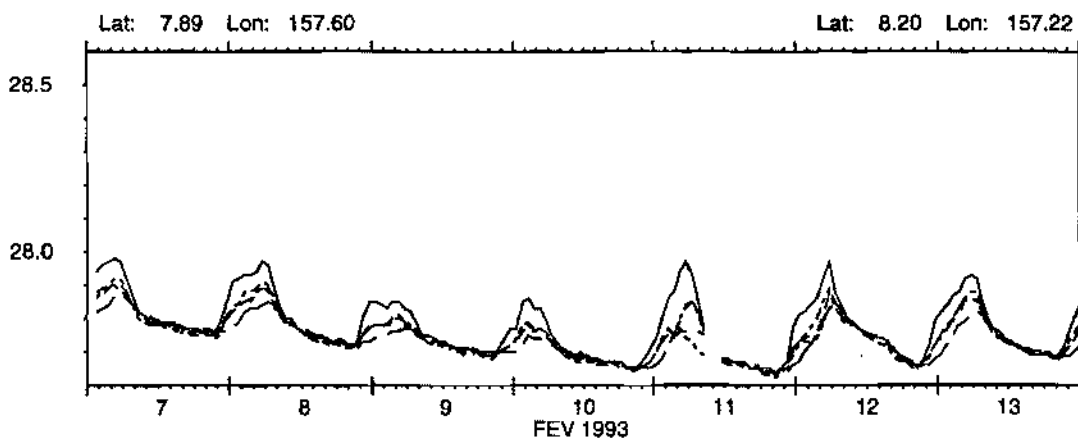
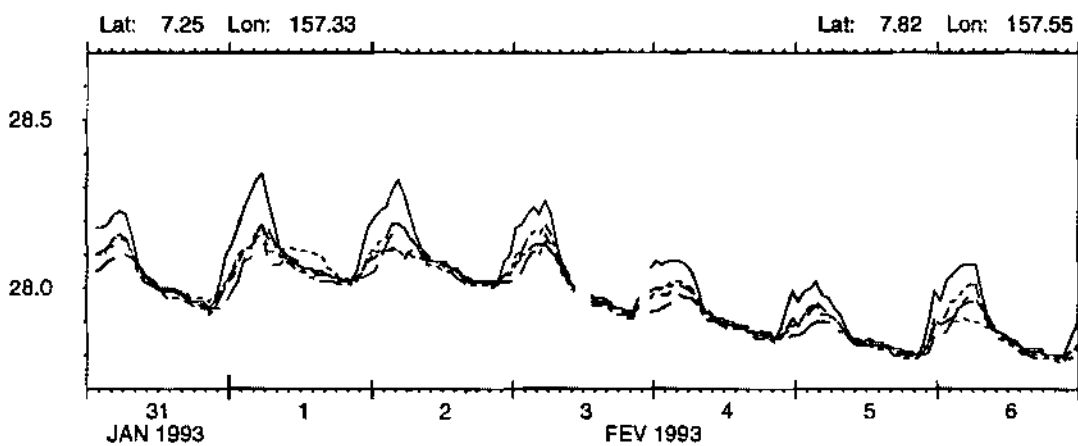
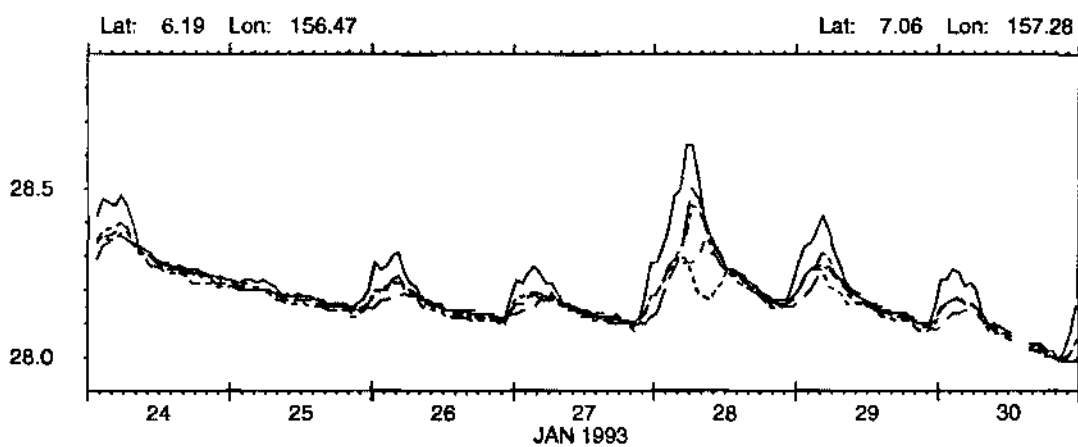
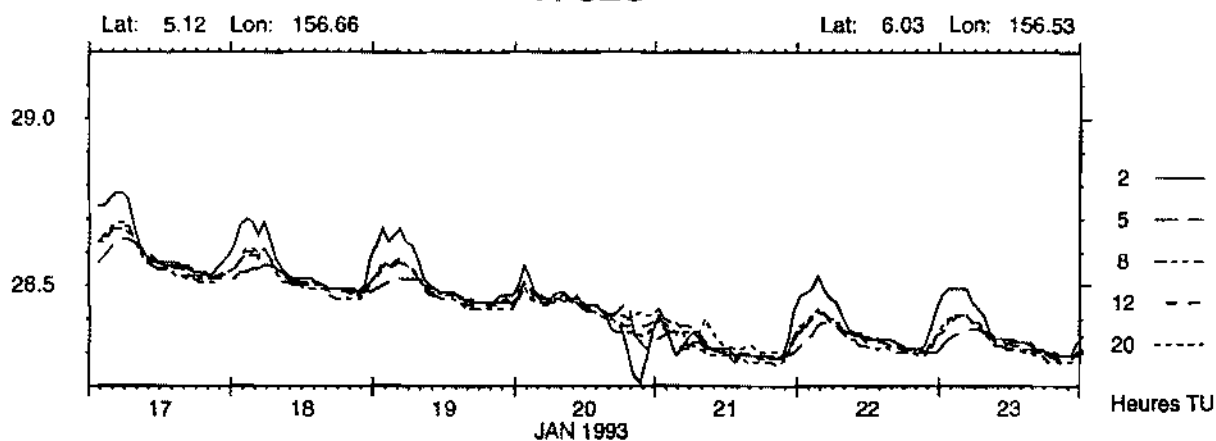
N°17623



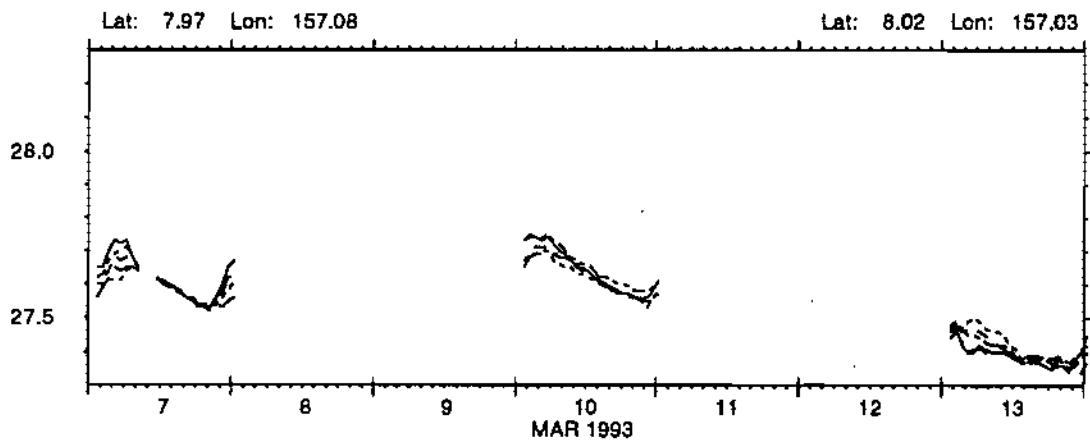
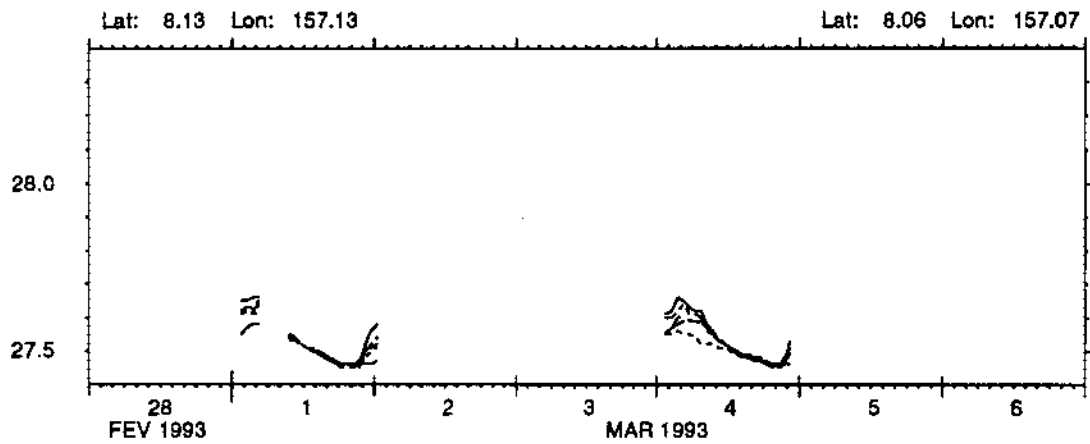
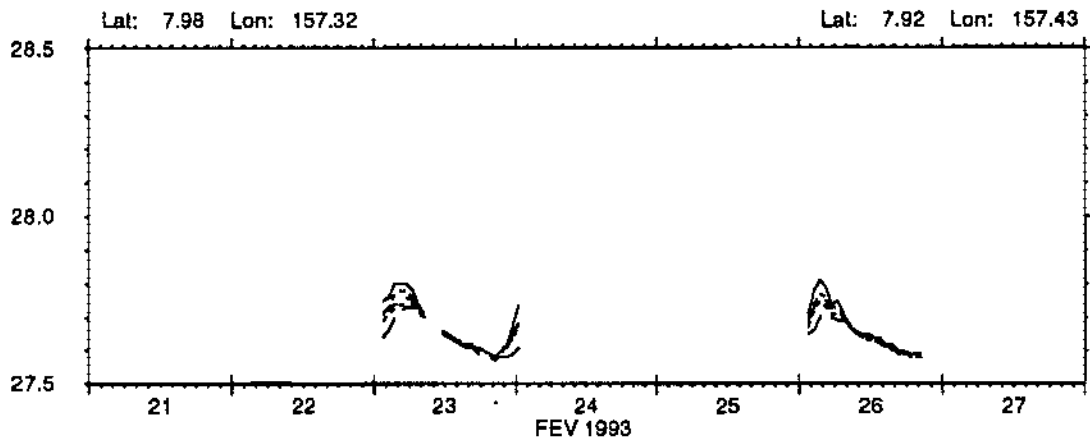
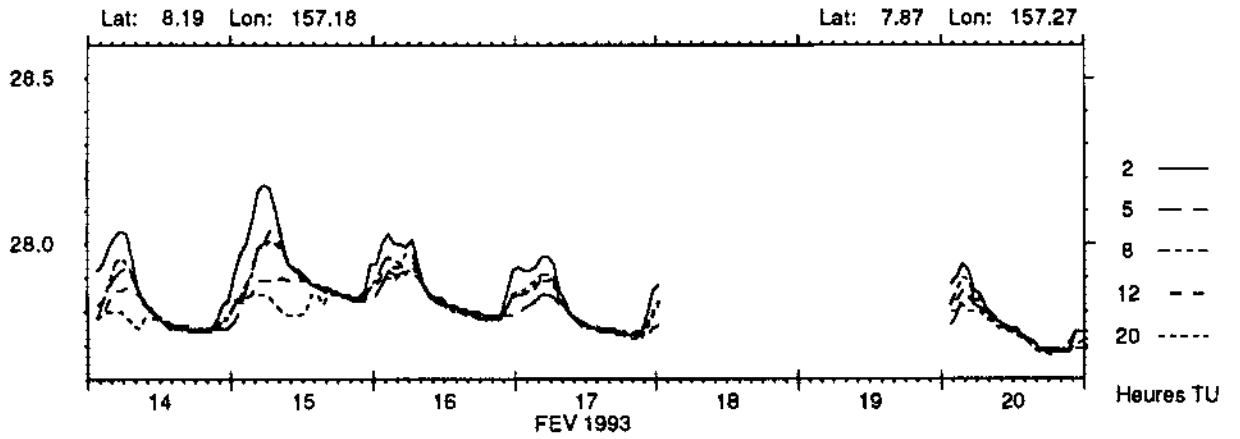
17623



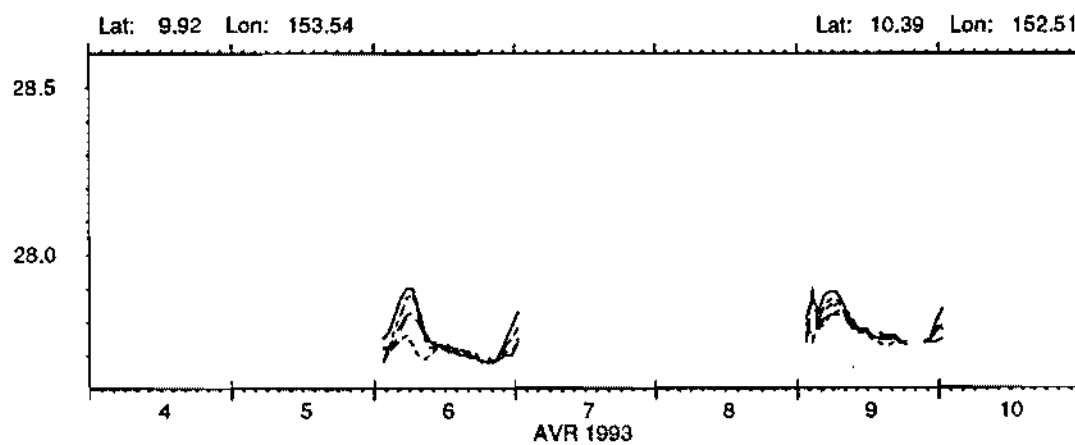
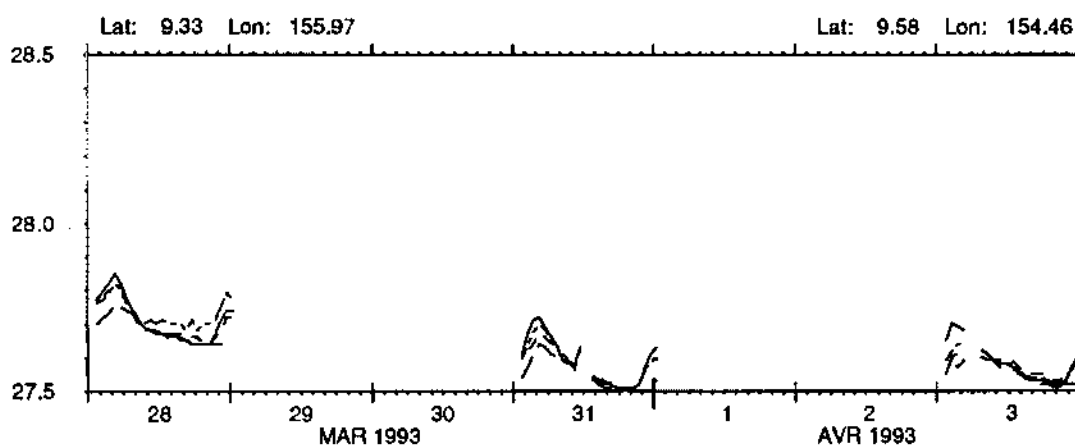
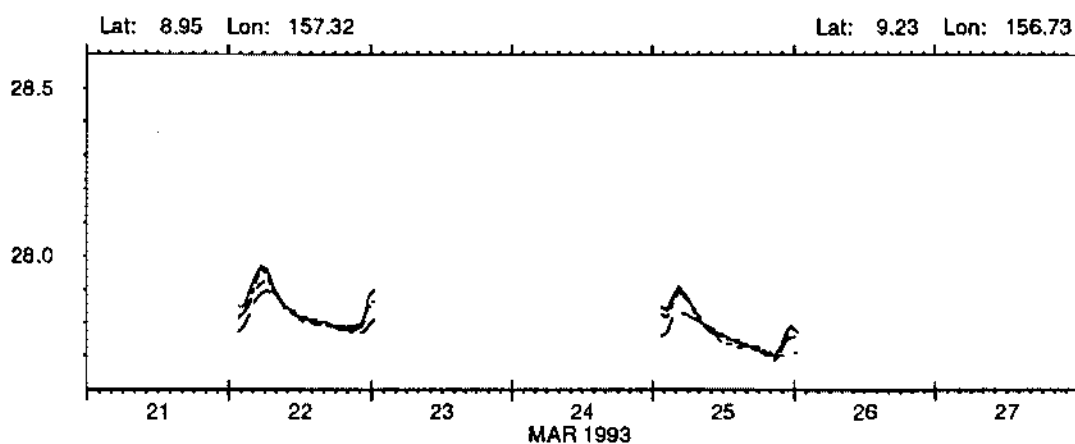
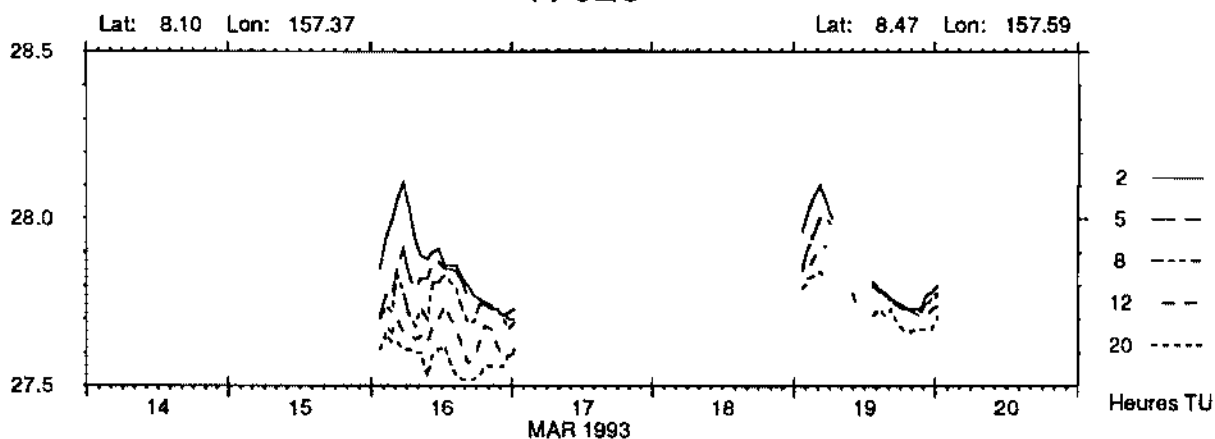
17623



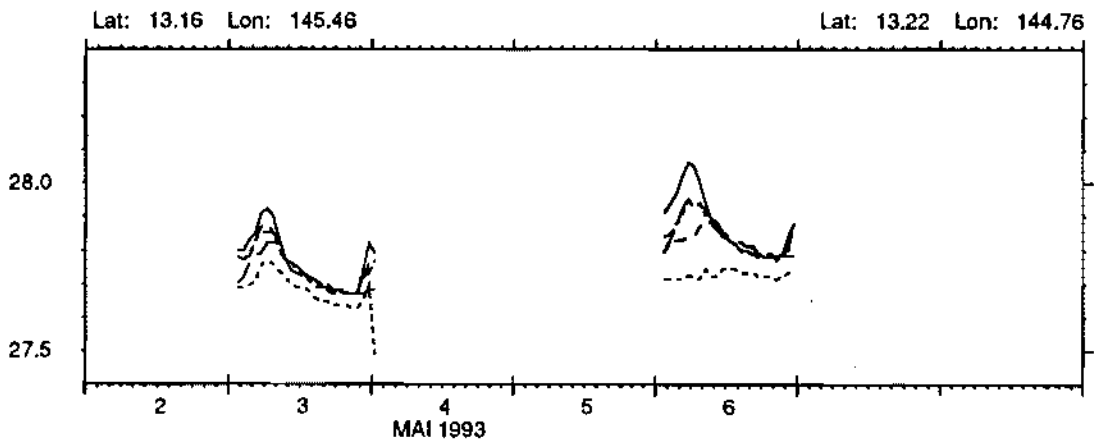
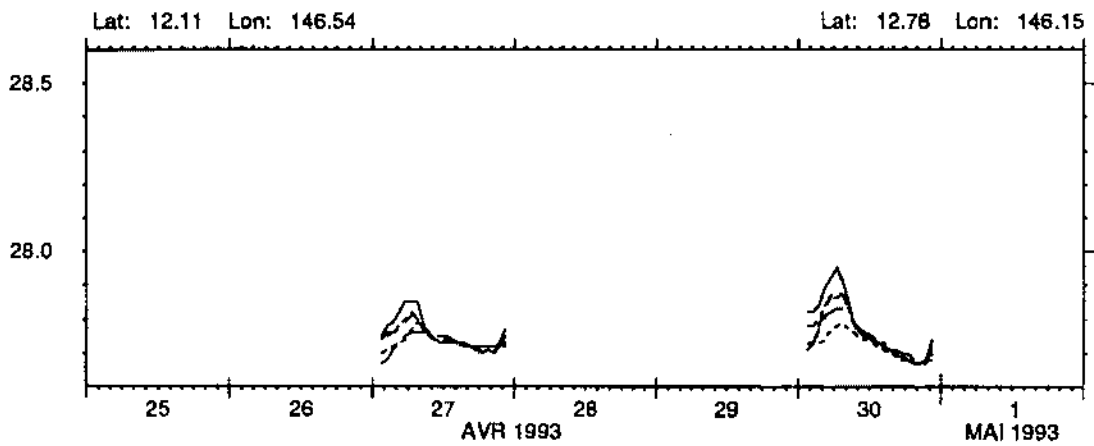
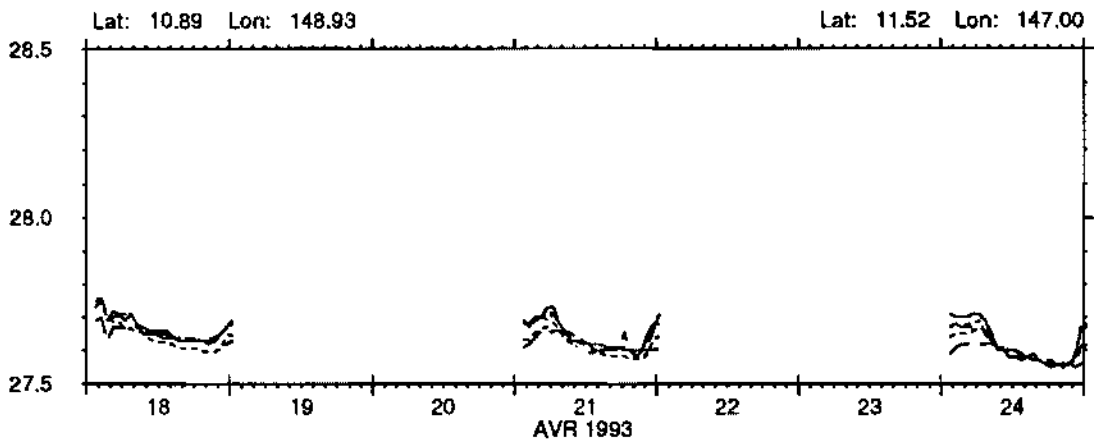
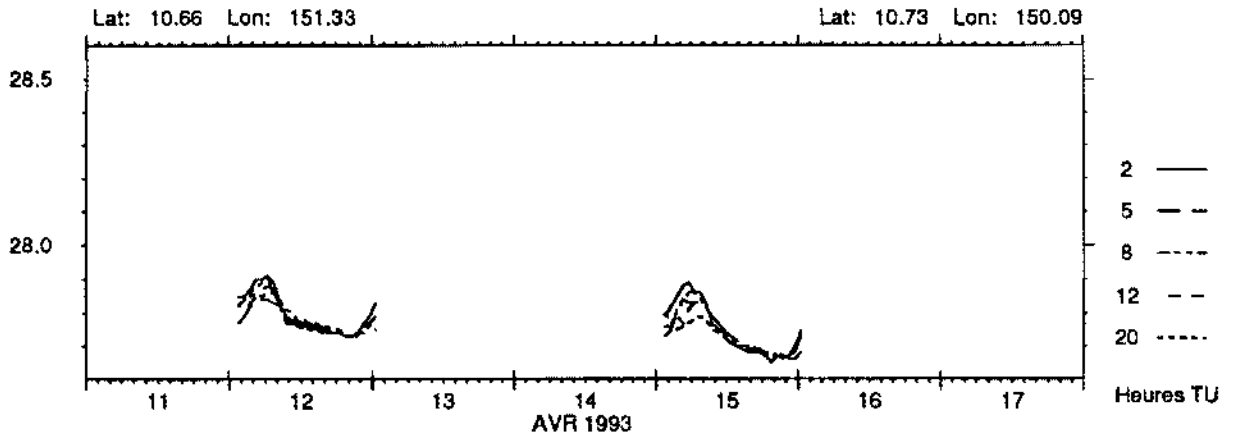
17623



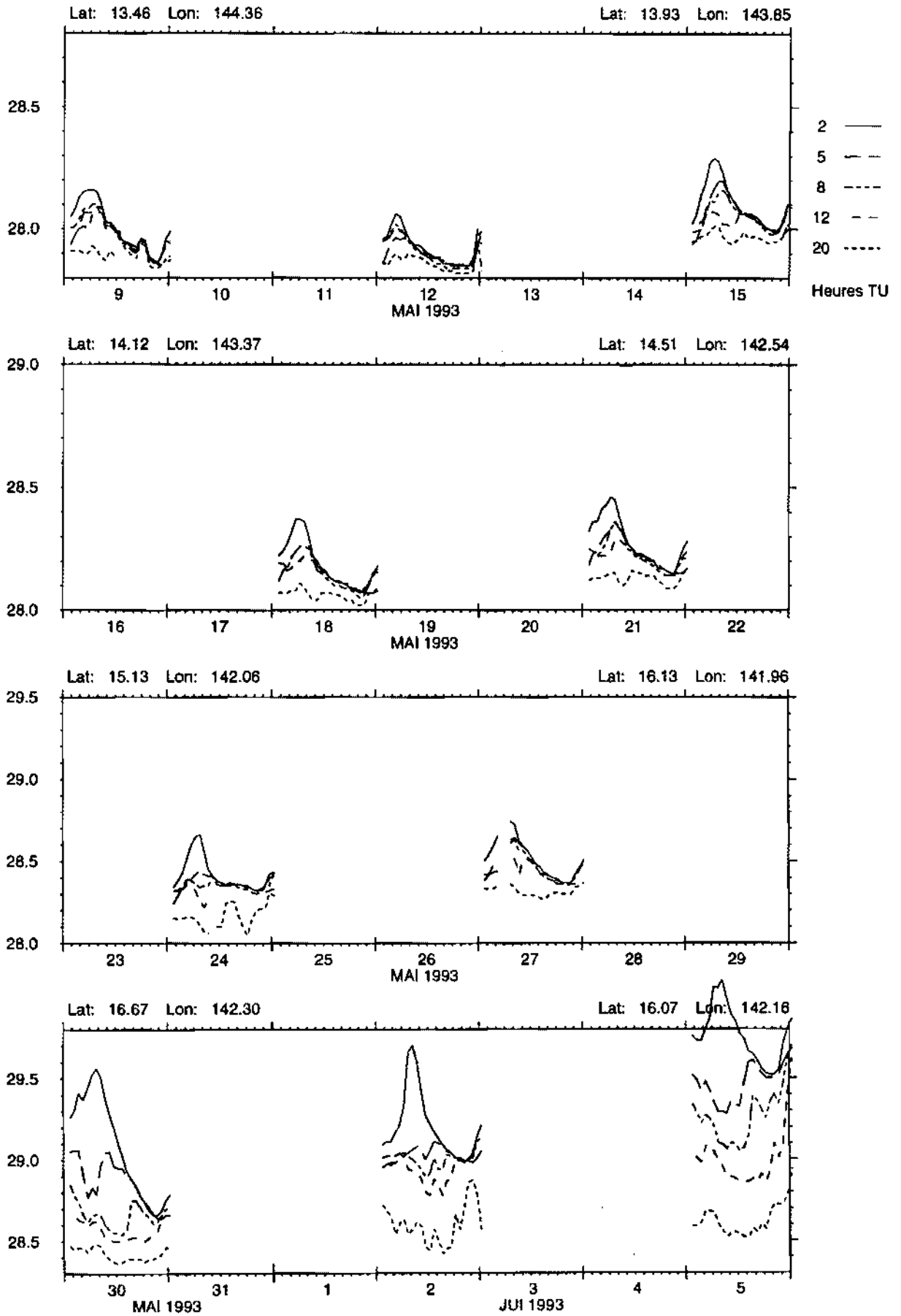
17623



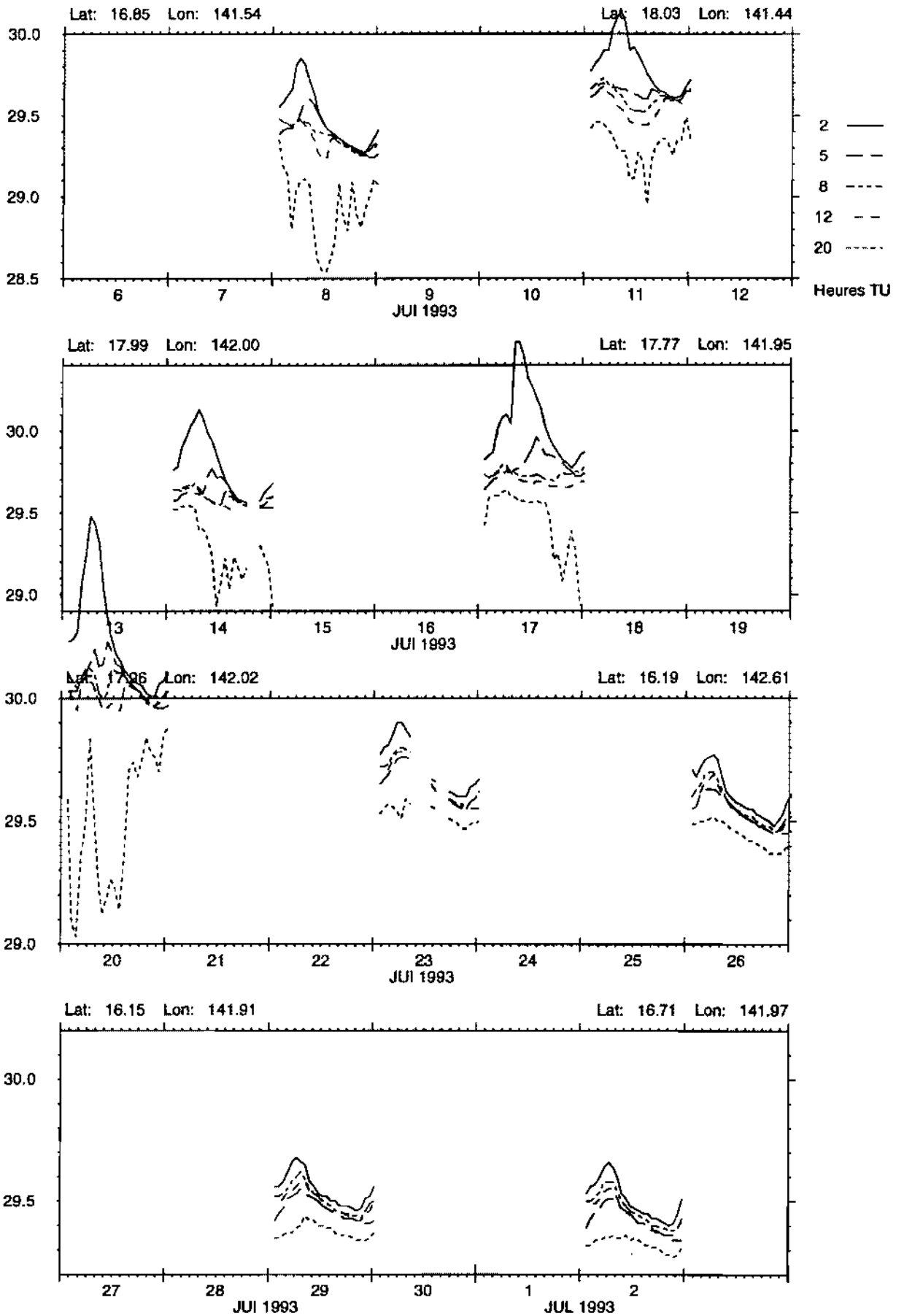
17623



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17623





Bouée dérivante BODEGA n° 17624

Date début et position : 20/12/92 à 3.98°N, 156.00°E

Launch date and position

Date fin et position : 21/09/93 à 14.70°N, 134.67°E

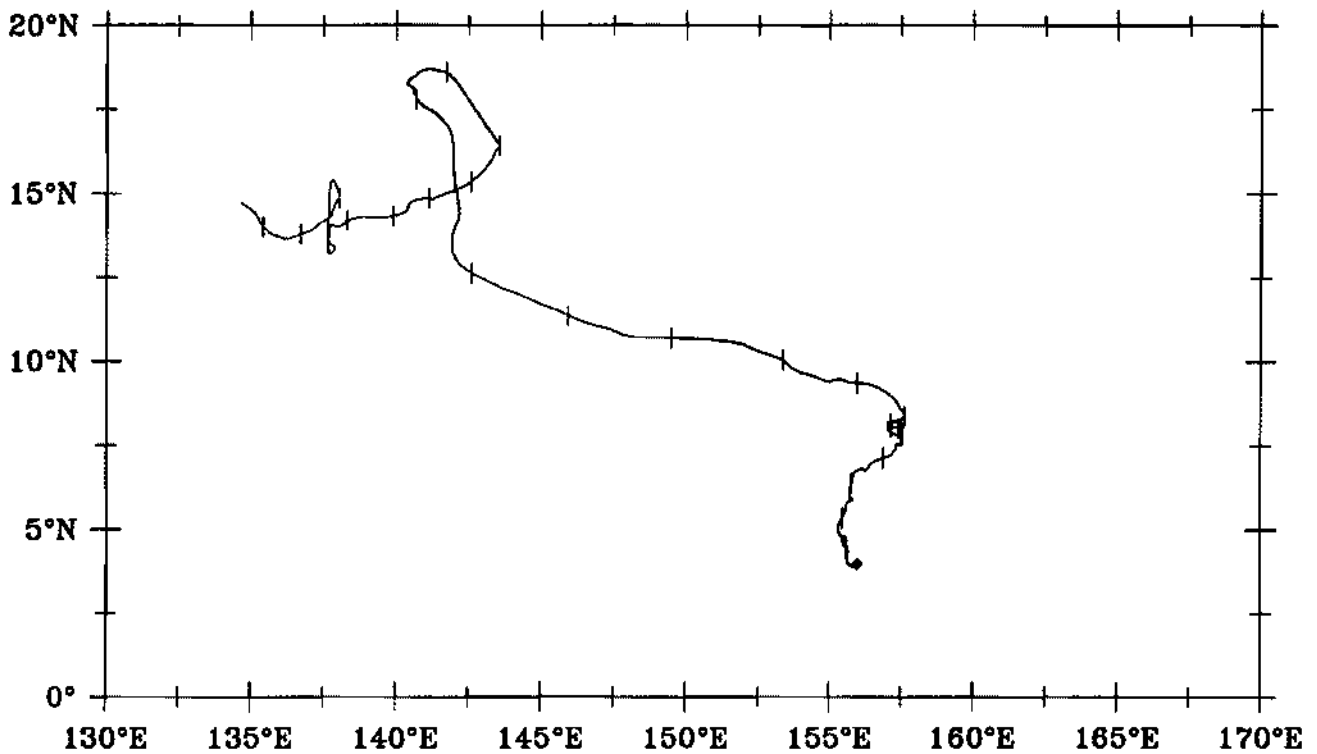
End date and position

Corrections effectuées pour compenser les dérives de capteurs :

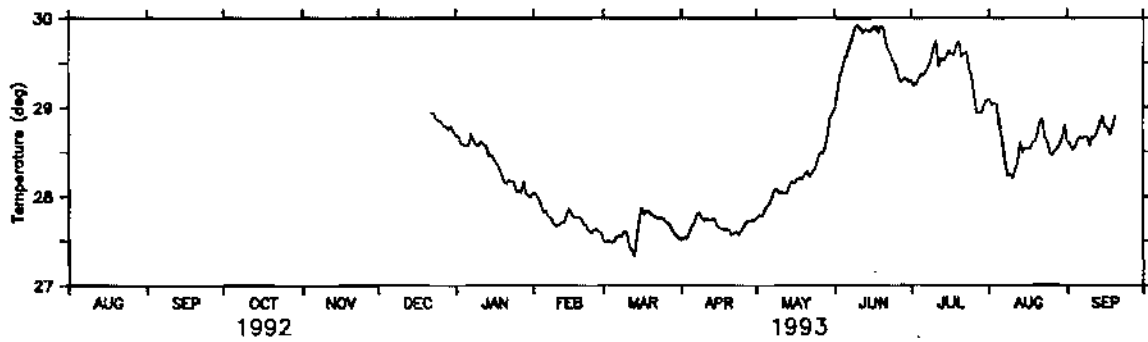
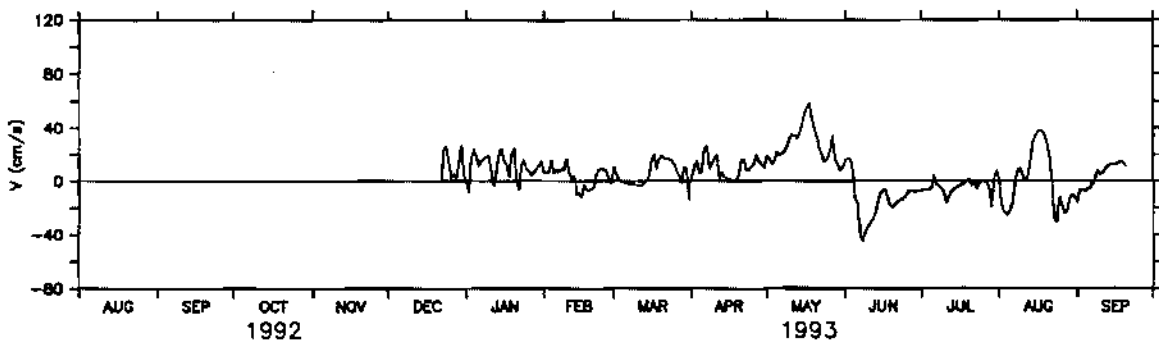
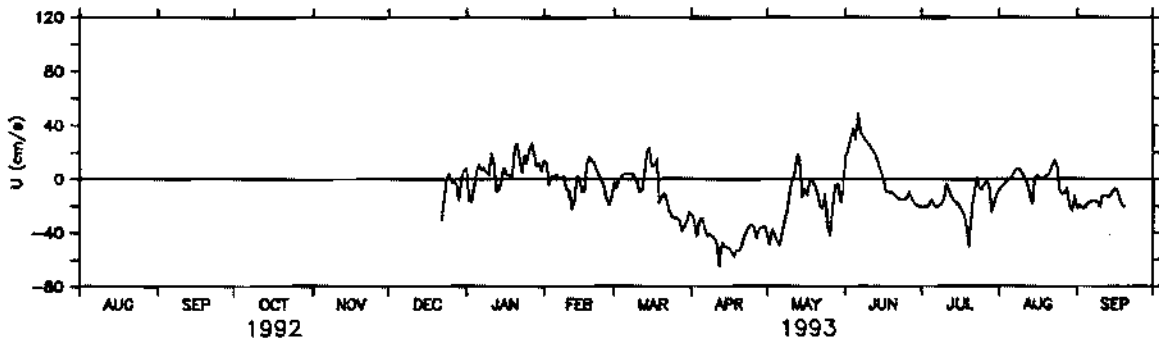
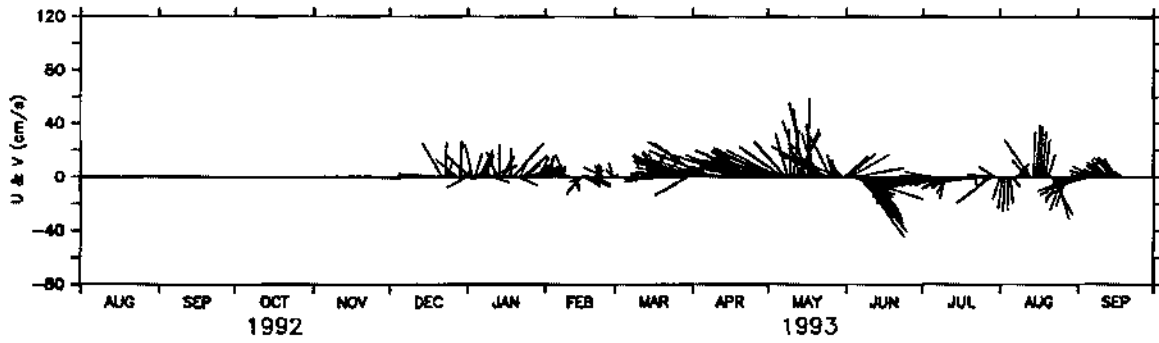
Proposed corrections to compensate sensor drifts

- . cycle 70 (19/03/93) : -0.02 capteur 12m
- . cycle 89 (15/05/93) : -0.03 capteur 5m
-0.01 capteur 8m
- . cycle 126 (03/10/93) : -0.06 capteur 5m
-0.31 capteur 12m

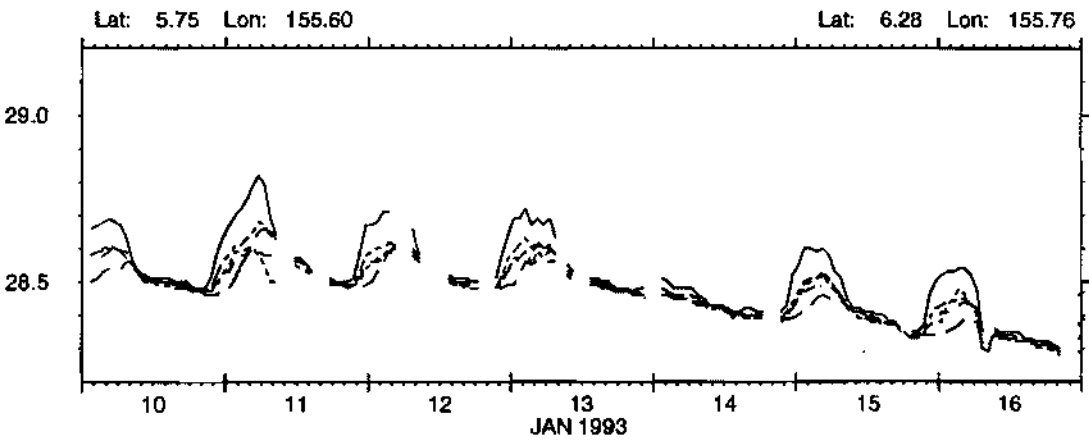
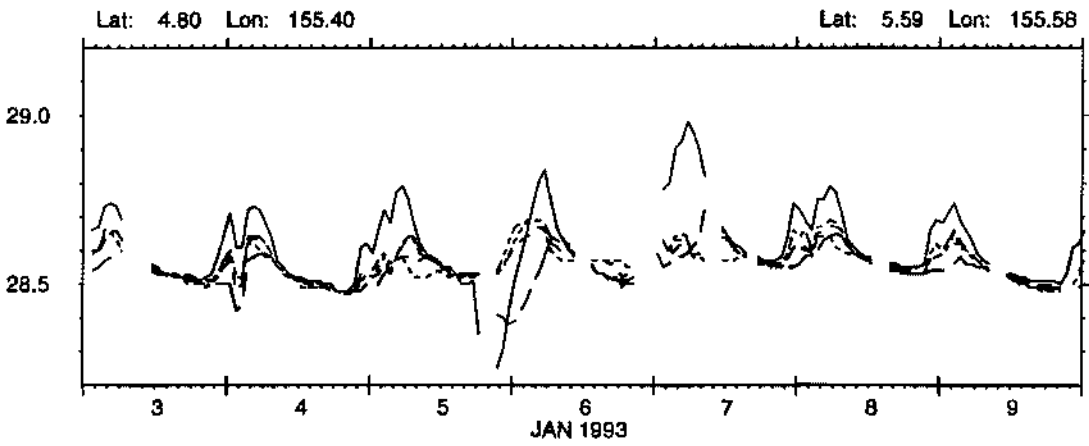
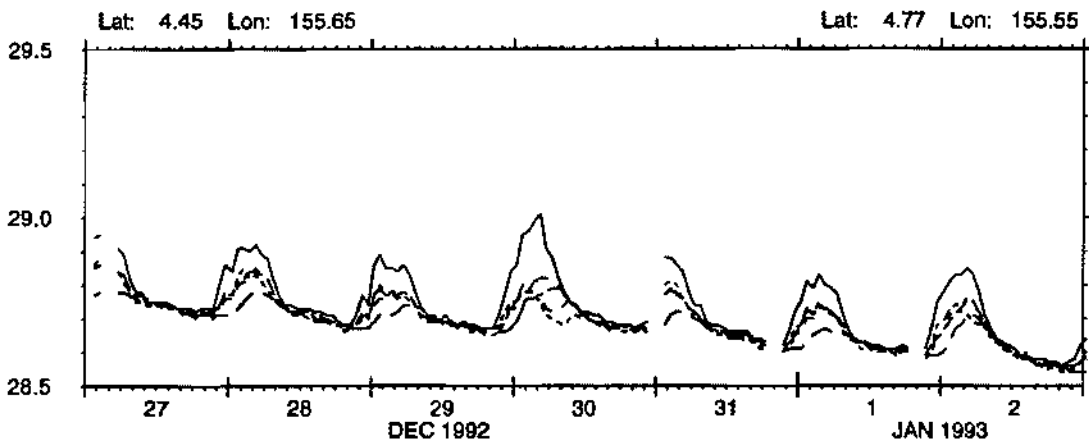
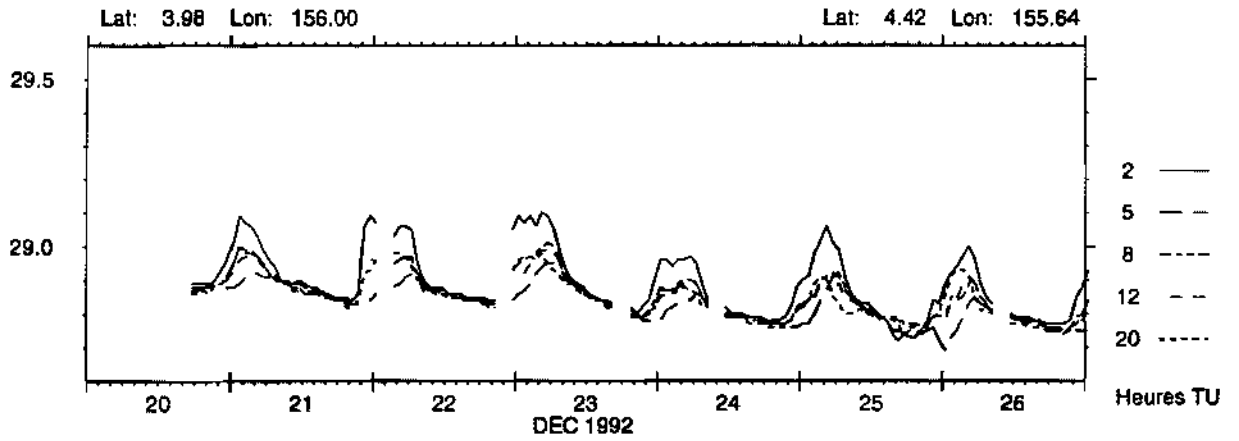
17624



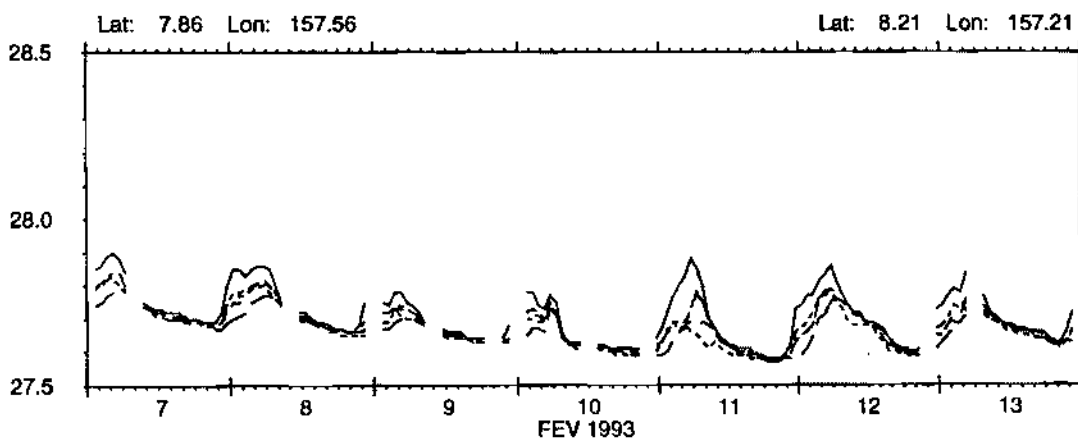
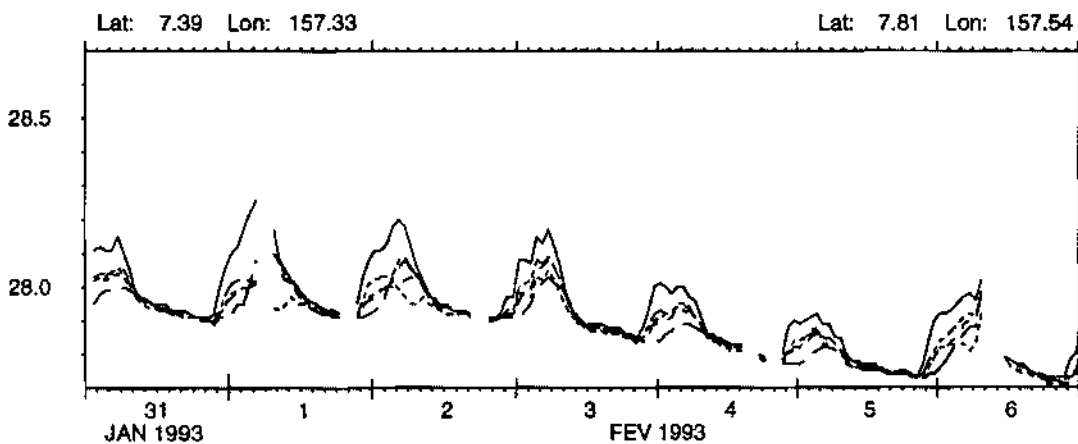
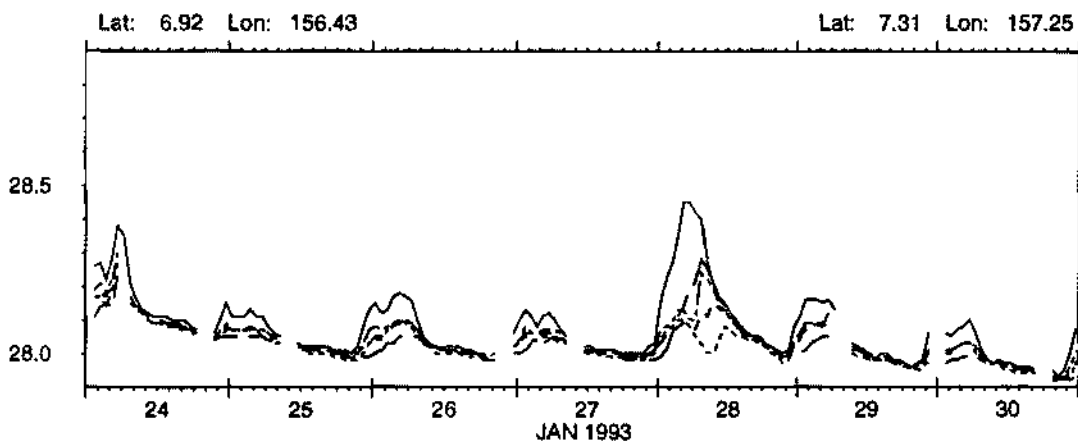
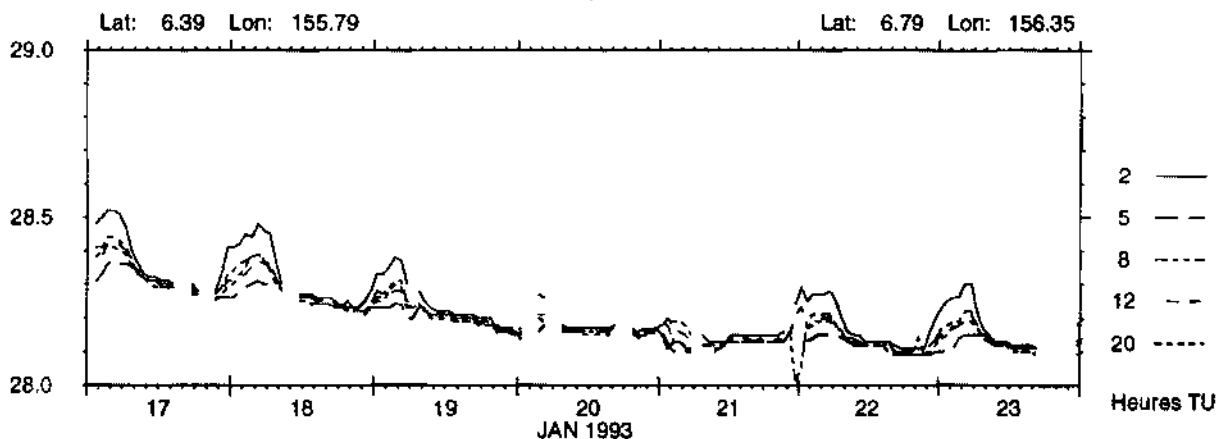
N°17624



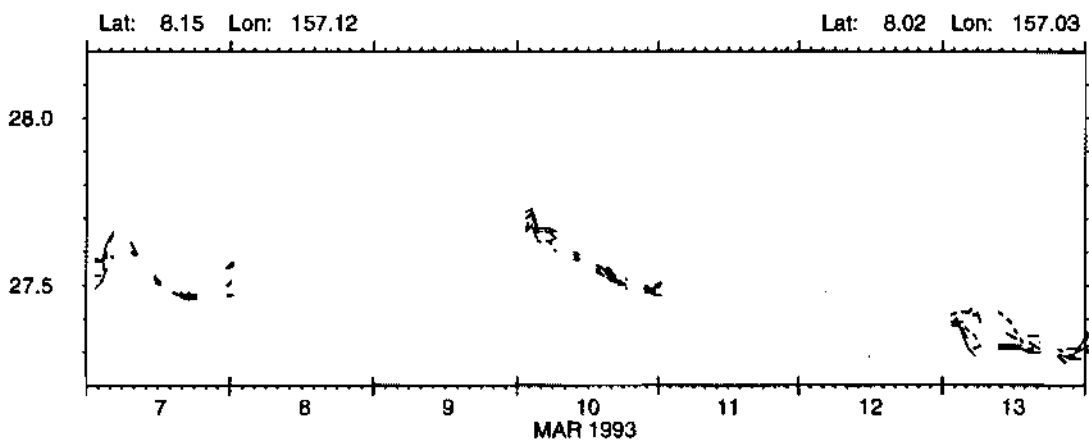
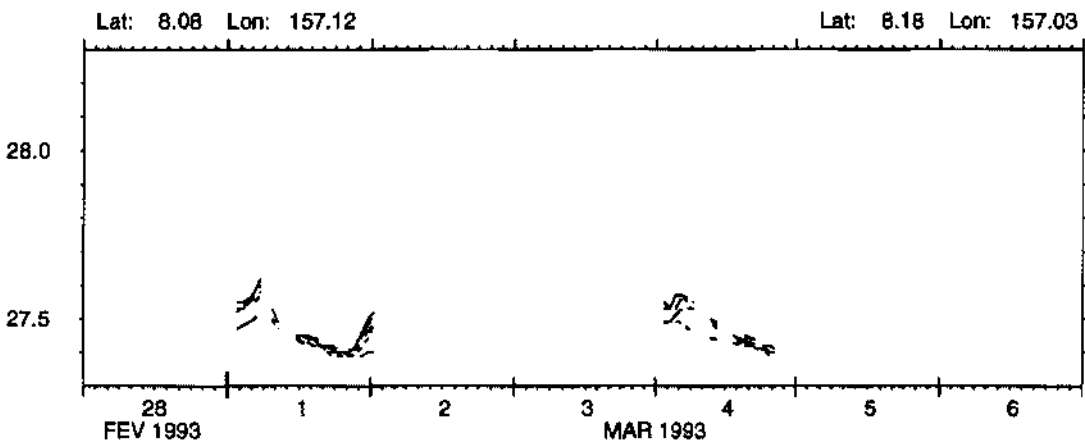
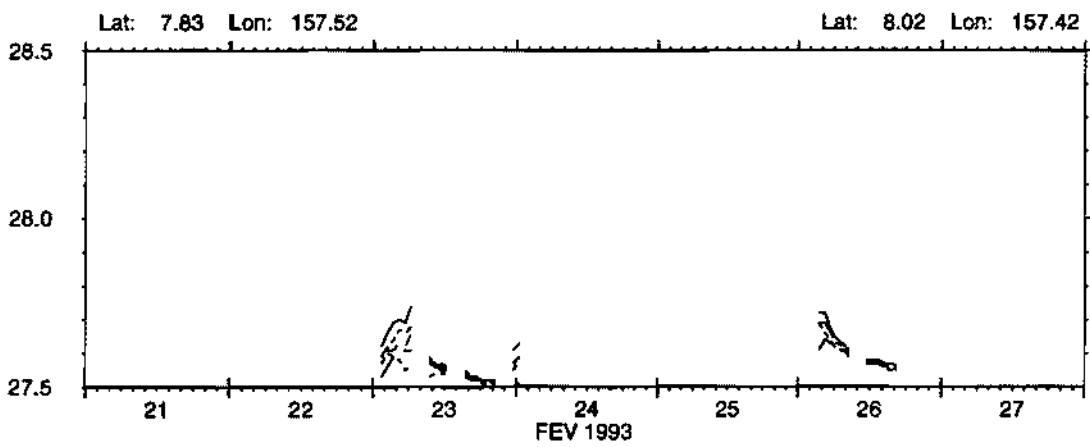
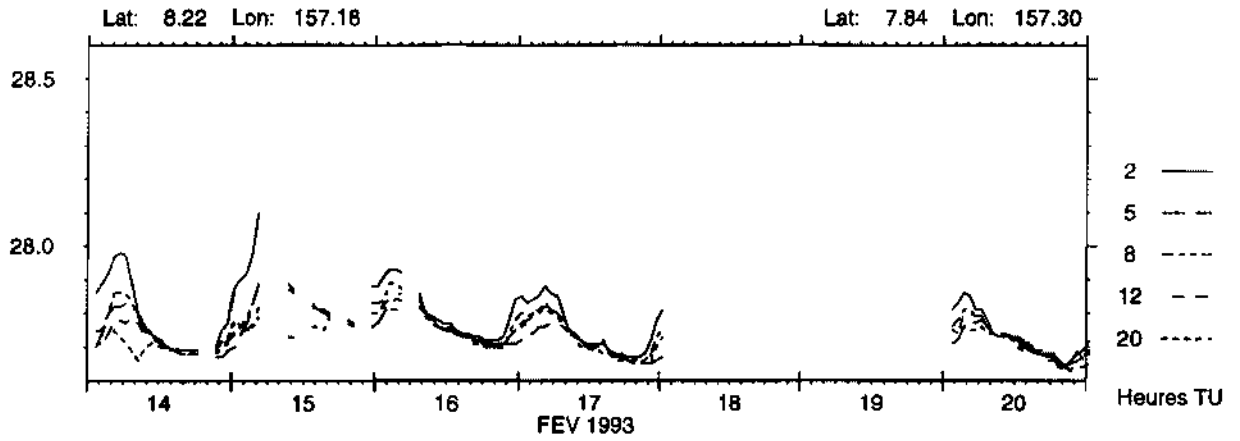
17624



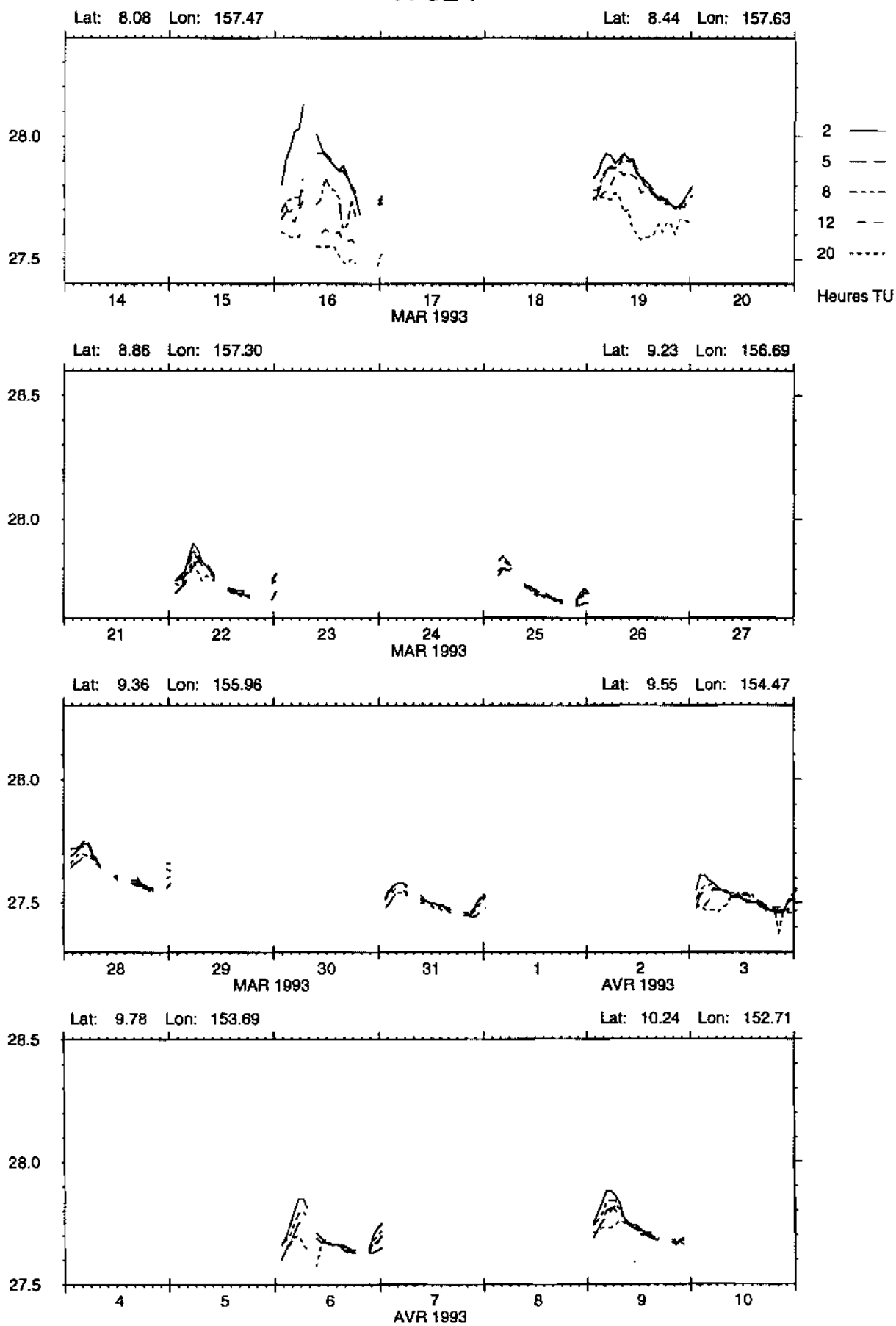
17624



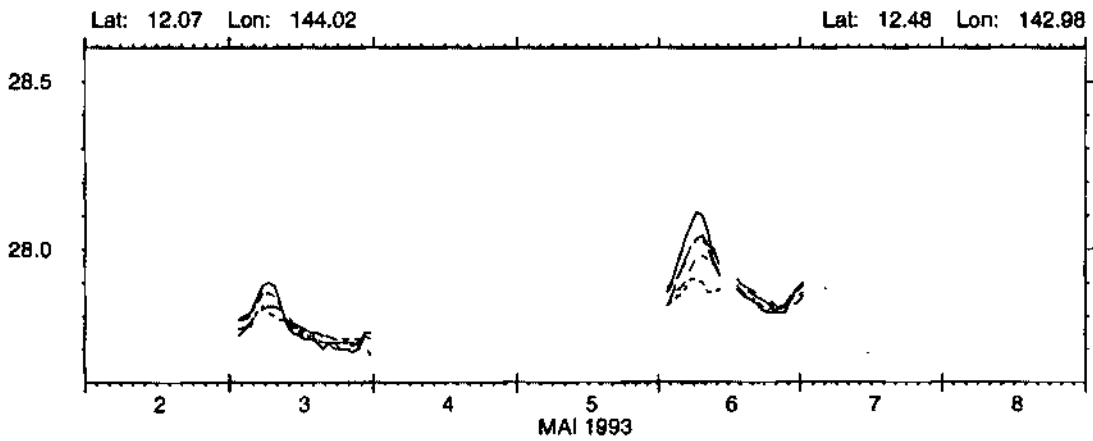
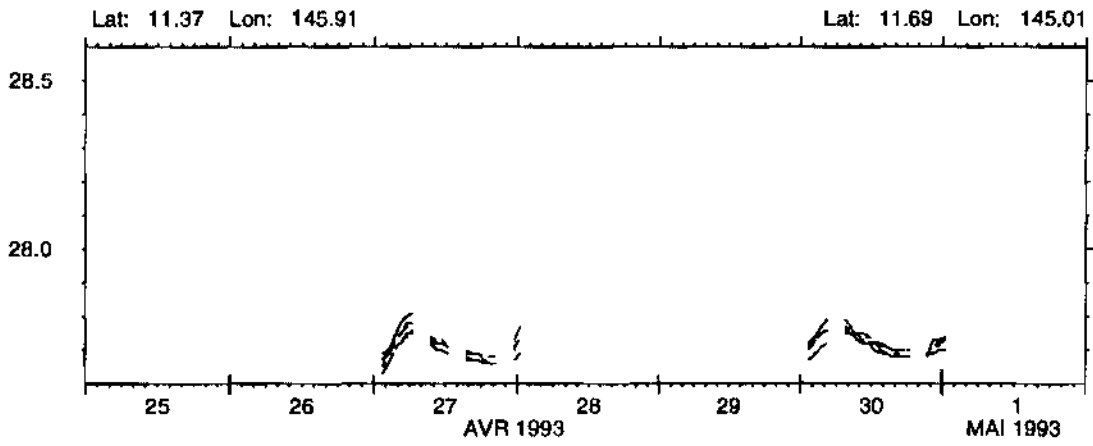
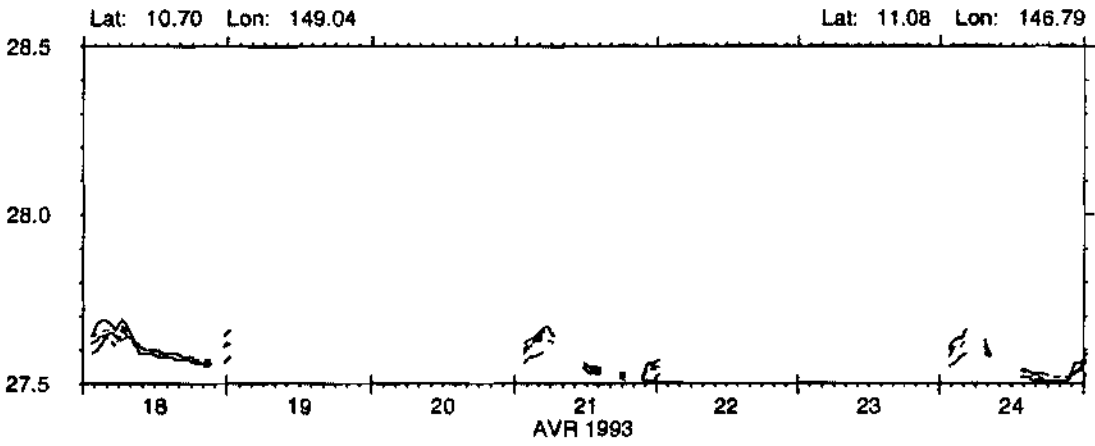
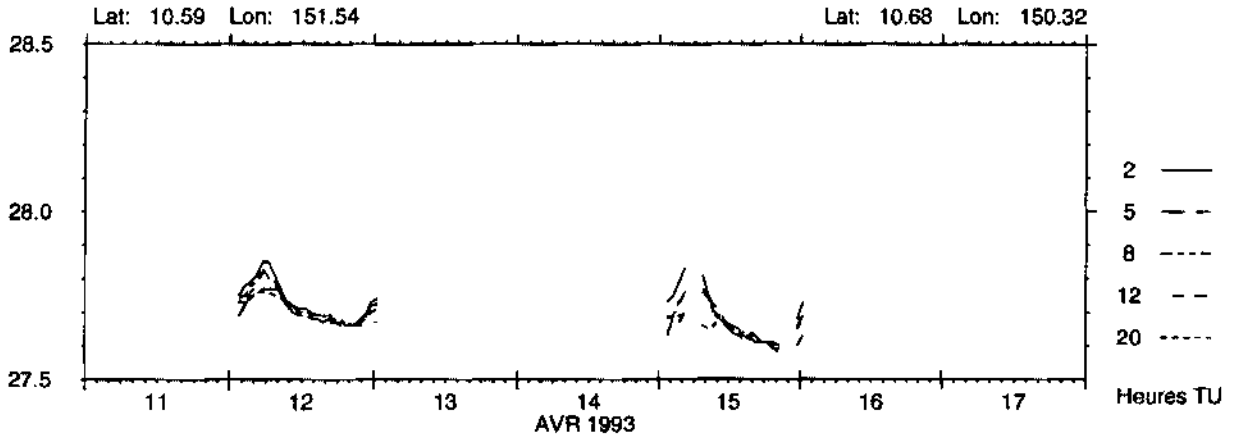
17624



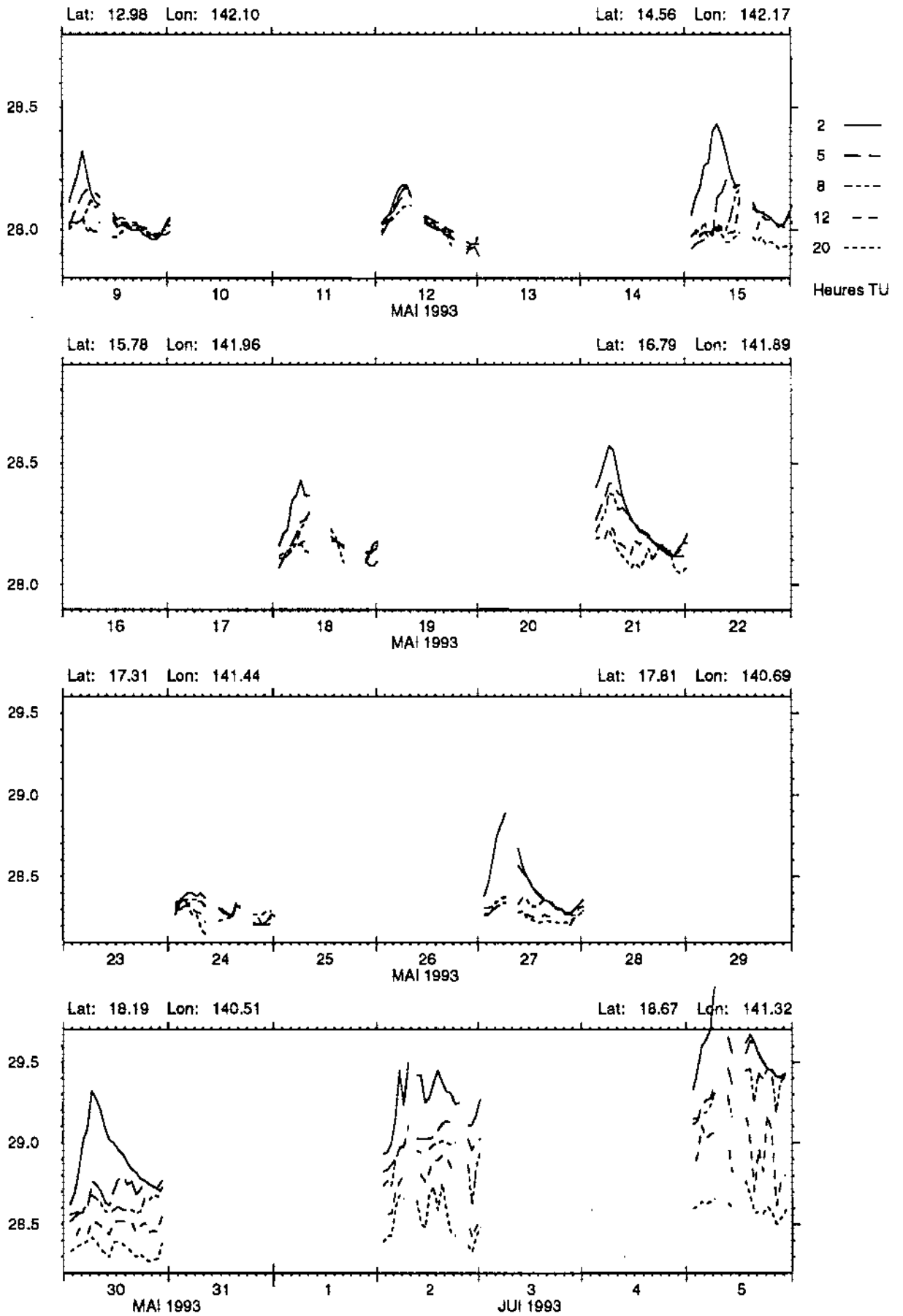
17624



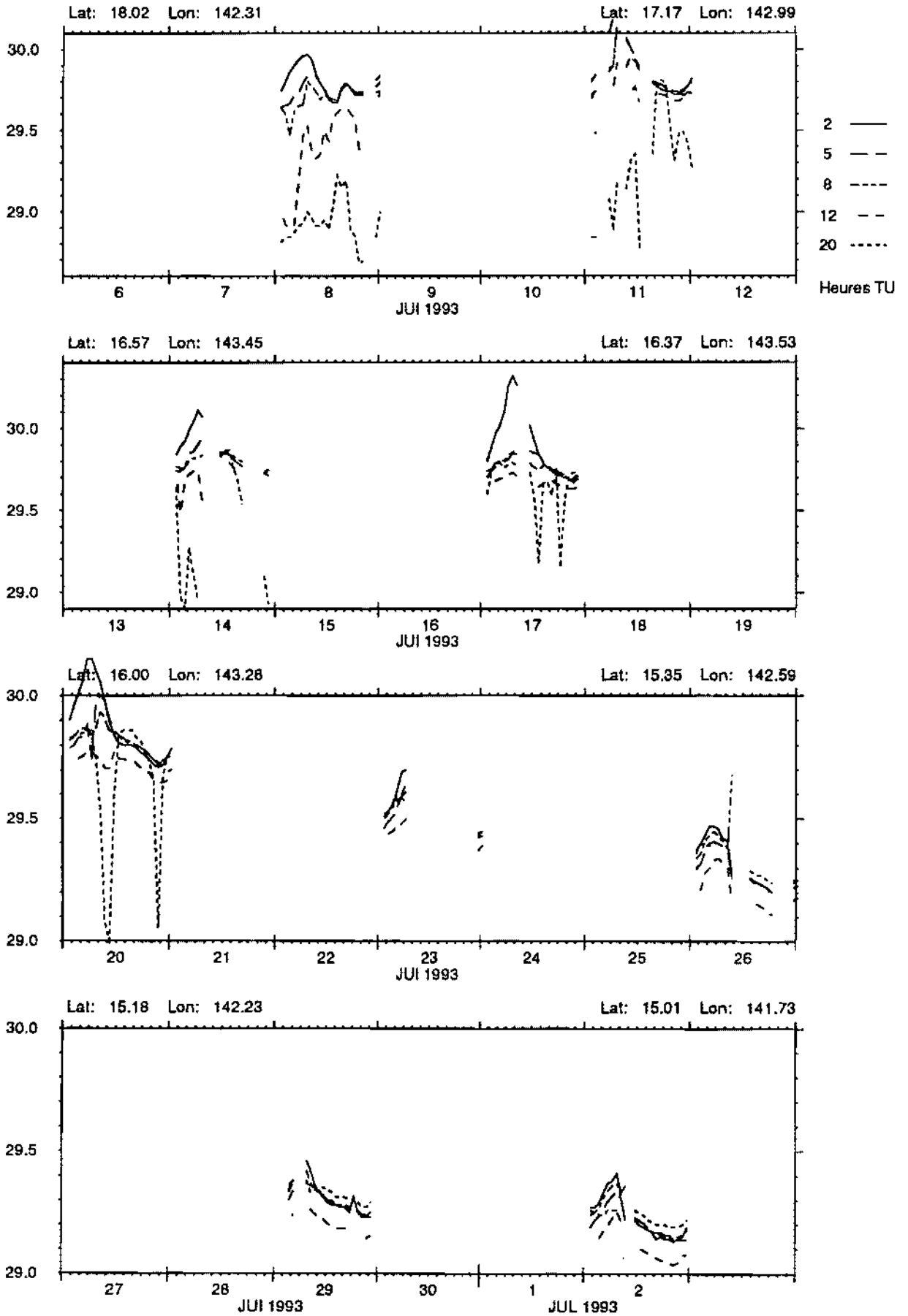
17624



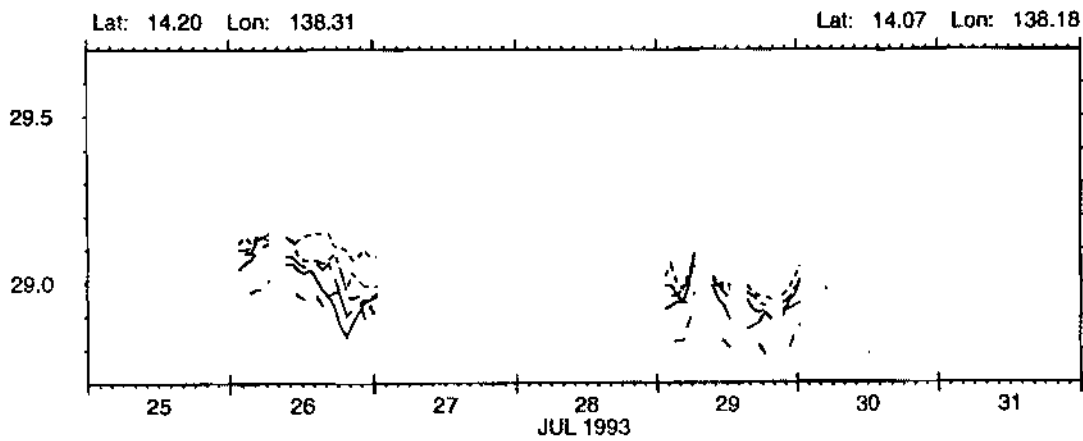
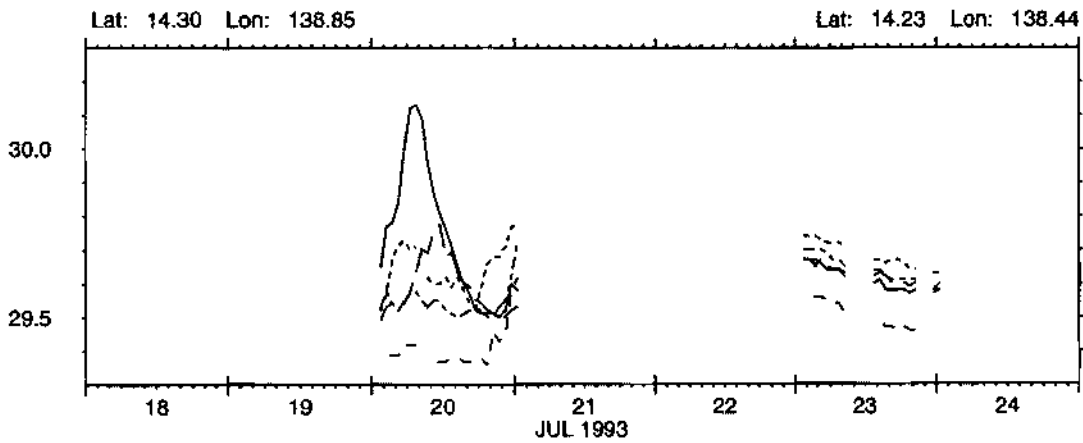
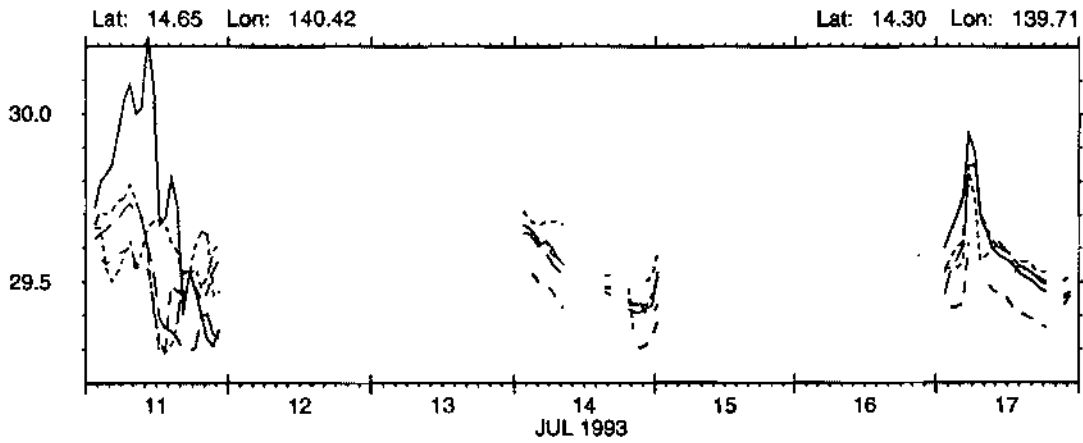
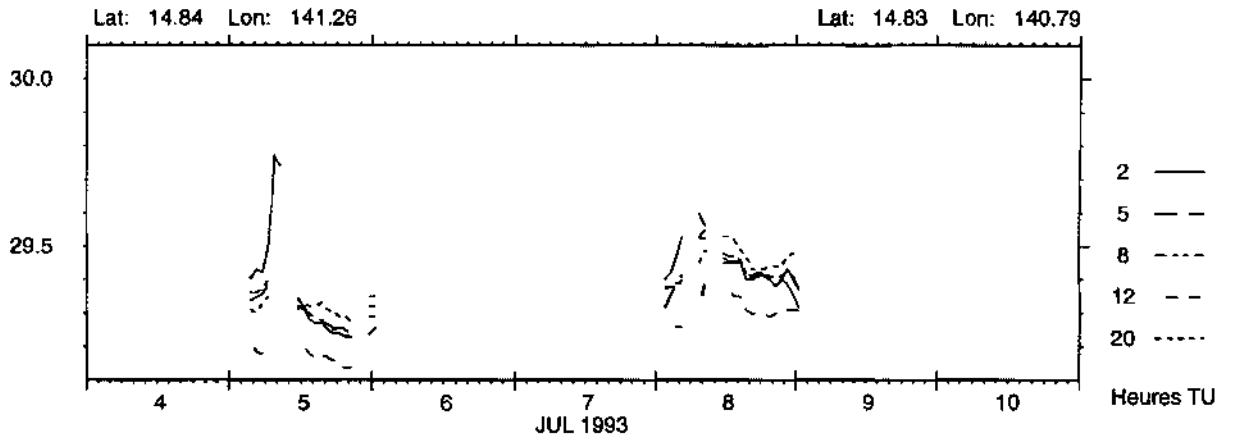
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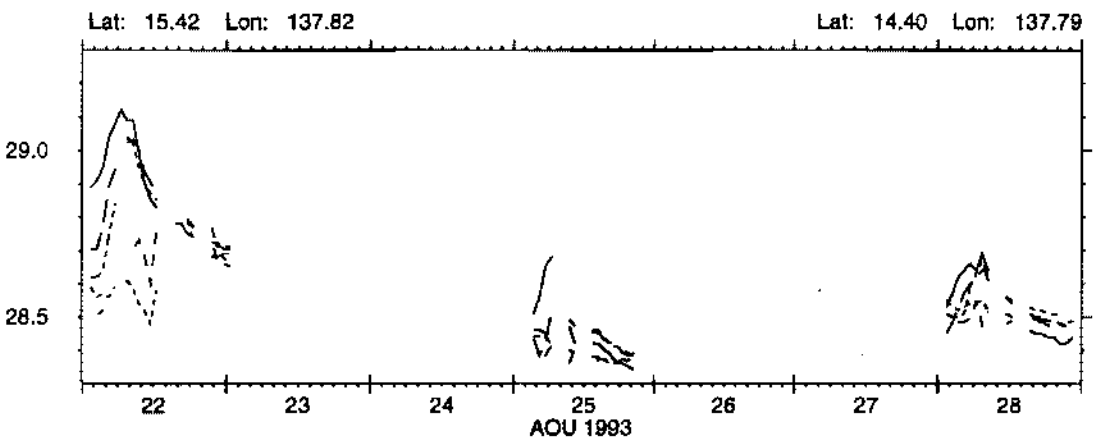
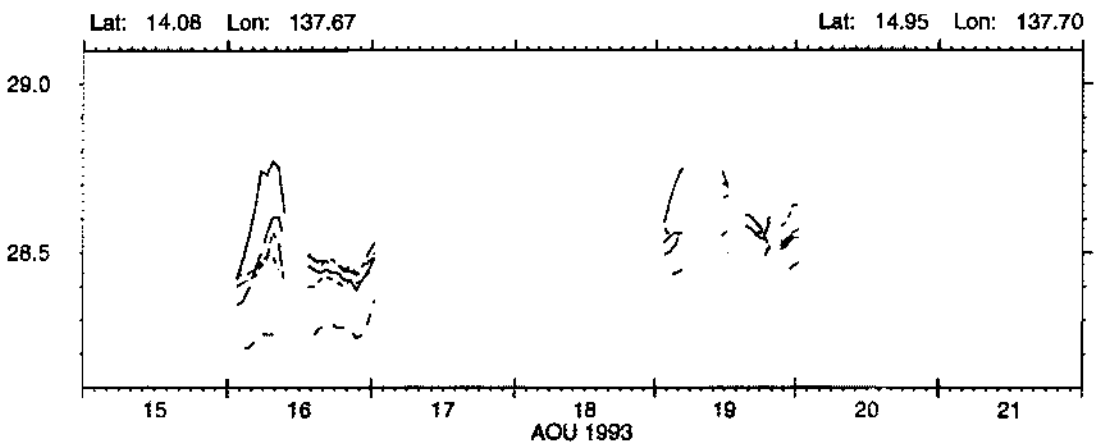
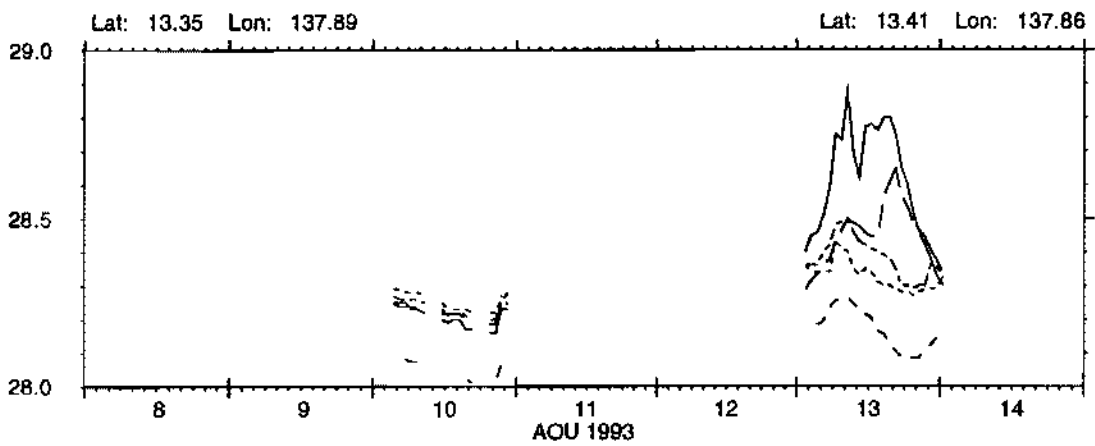
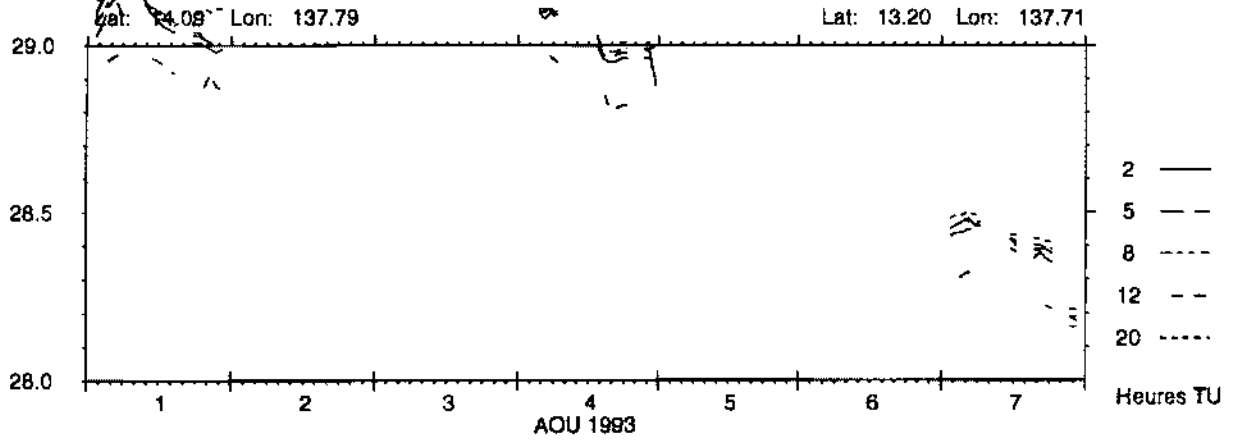
17624



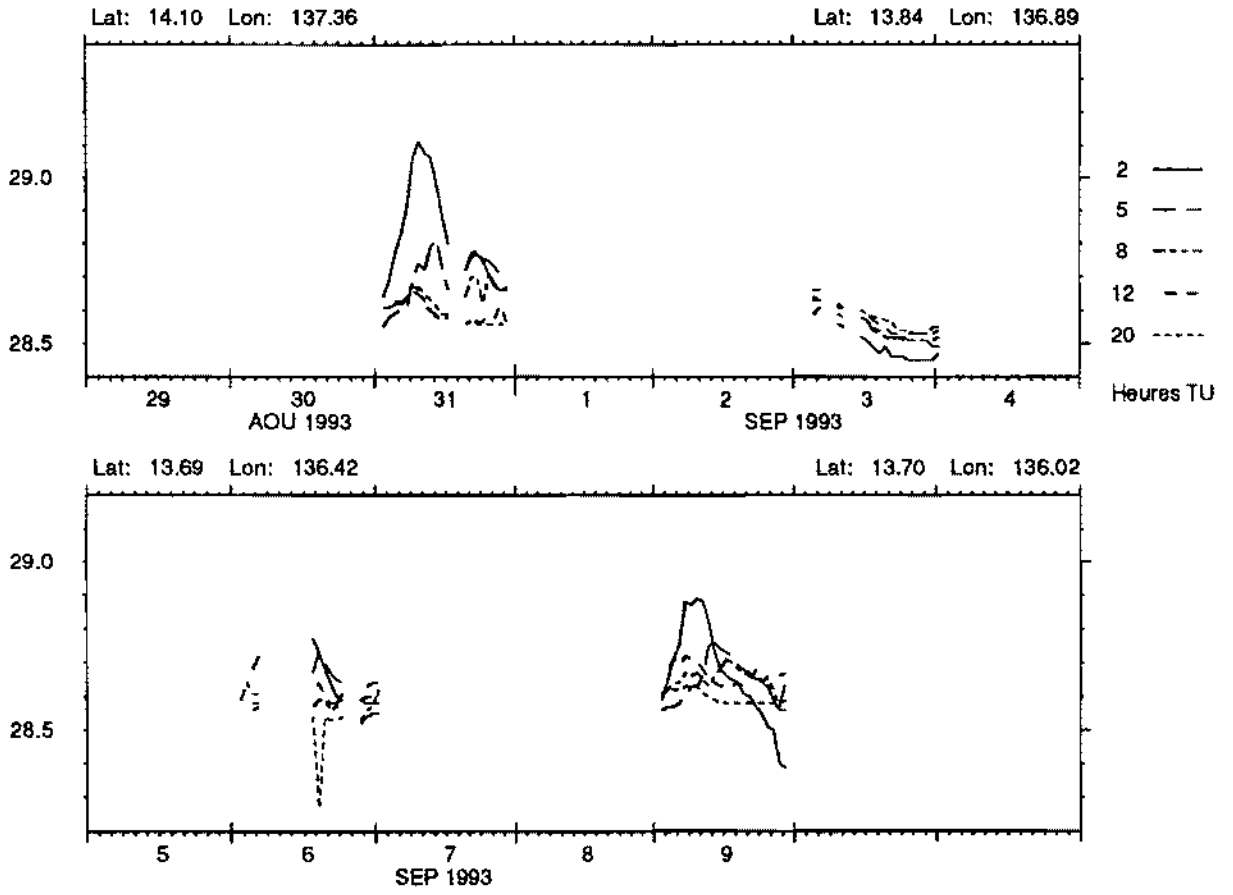
17624



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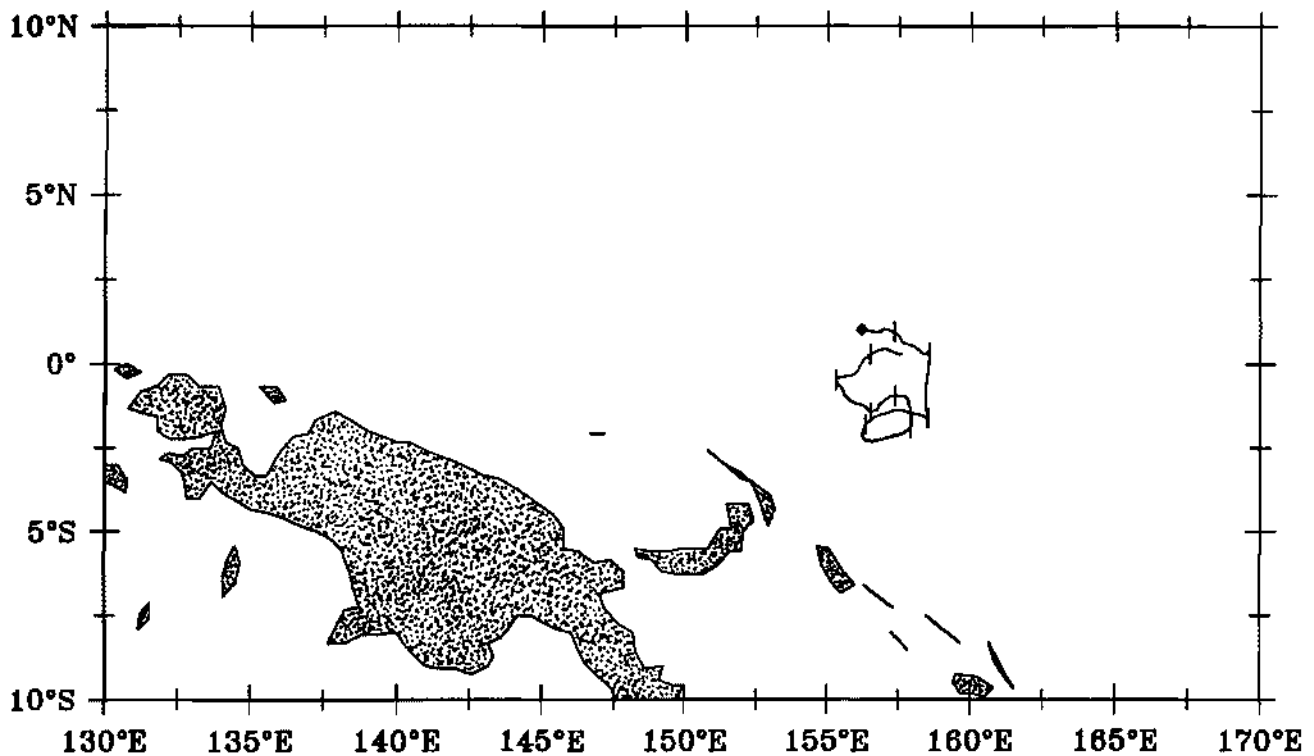
Bouée dérivante BODEGA n° 17625

Date début et position : 21/12/92 à 1°N, 156.00°E
Launch date and position
Date fin et position : 23/03/93 à 0.28°N, 157.65°E
End date and position

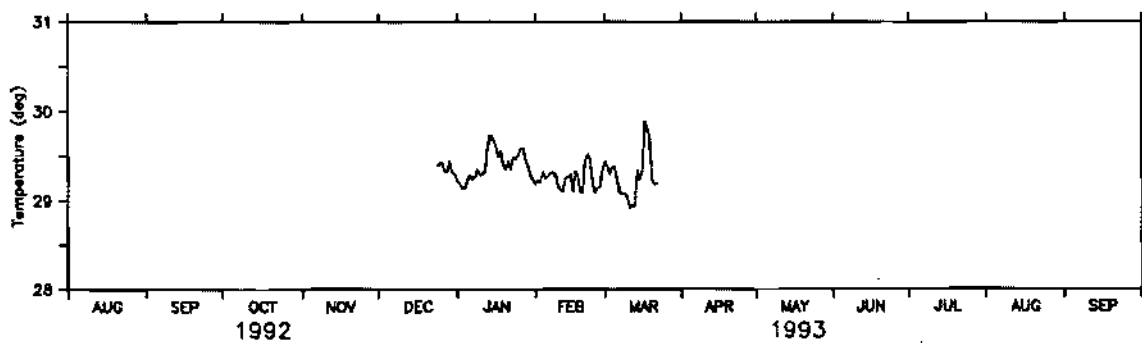
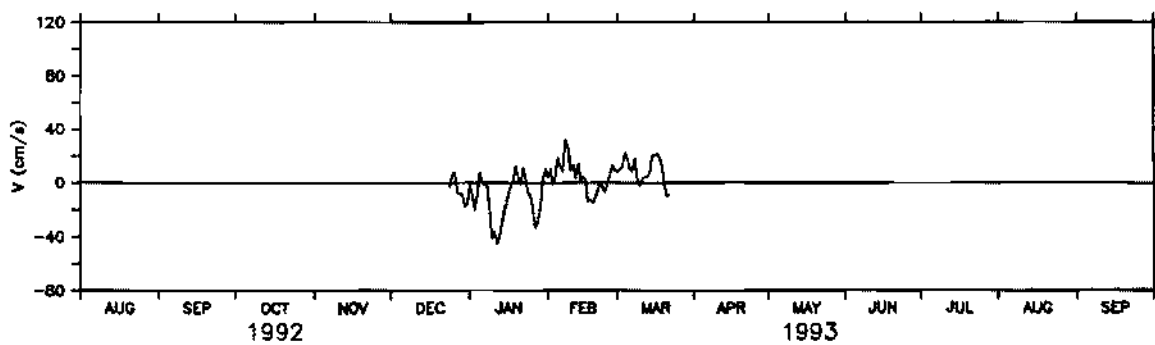
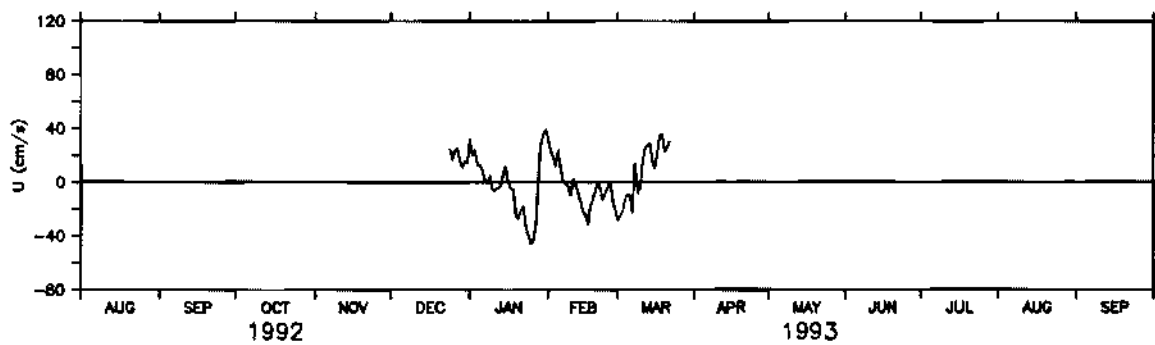
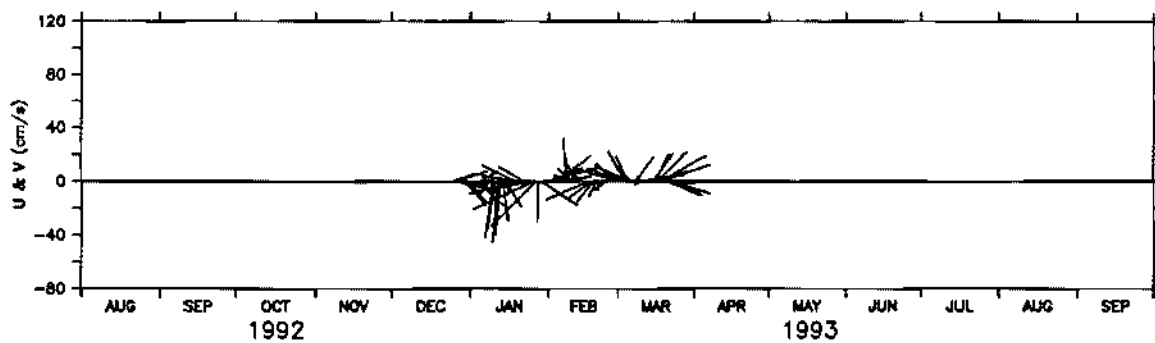
Corrections effectuées pour compenser les dérives de capteurs :
Proposed corrections to compensate sensor drifts

. cycle 1 (22/12/92) : +0.03 capteur 8m
. cycle 2 (23/12/92) : -0.01 capteur 20m
. cycle 33 (23/01/93) : -0.04 capteur 20m

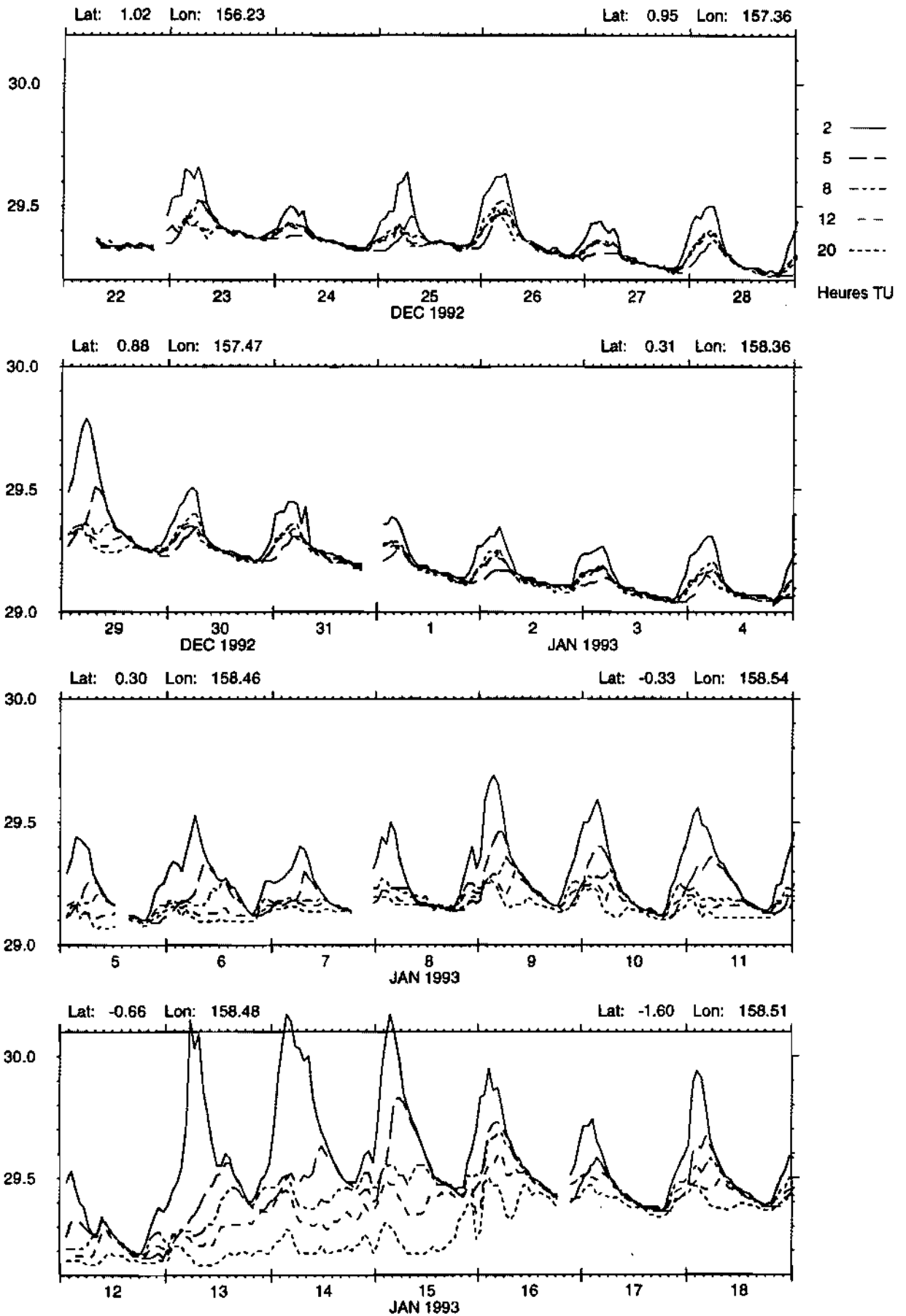
17625



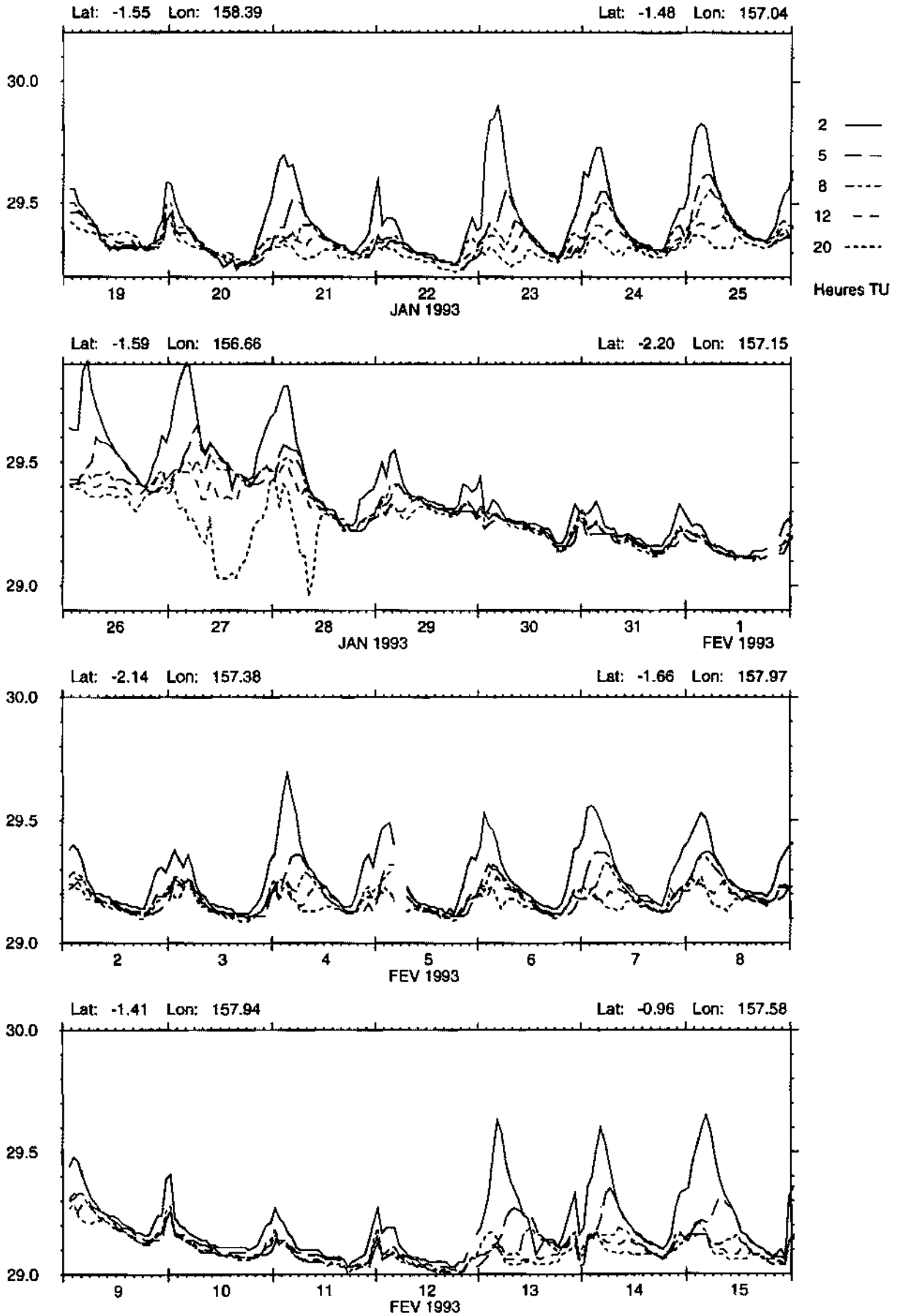
N°17625



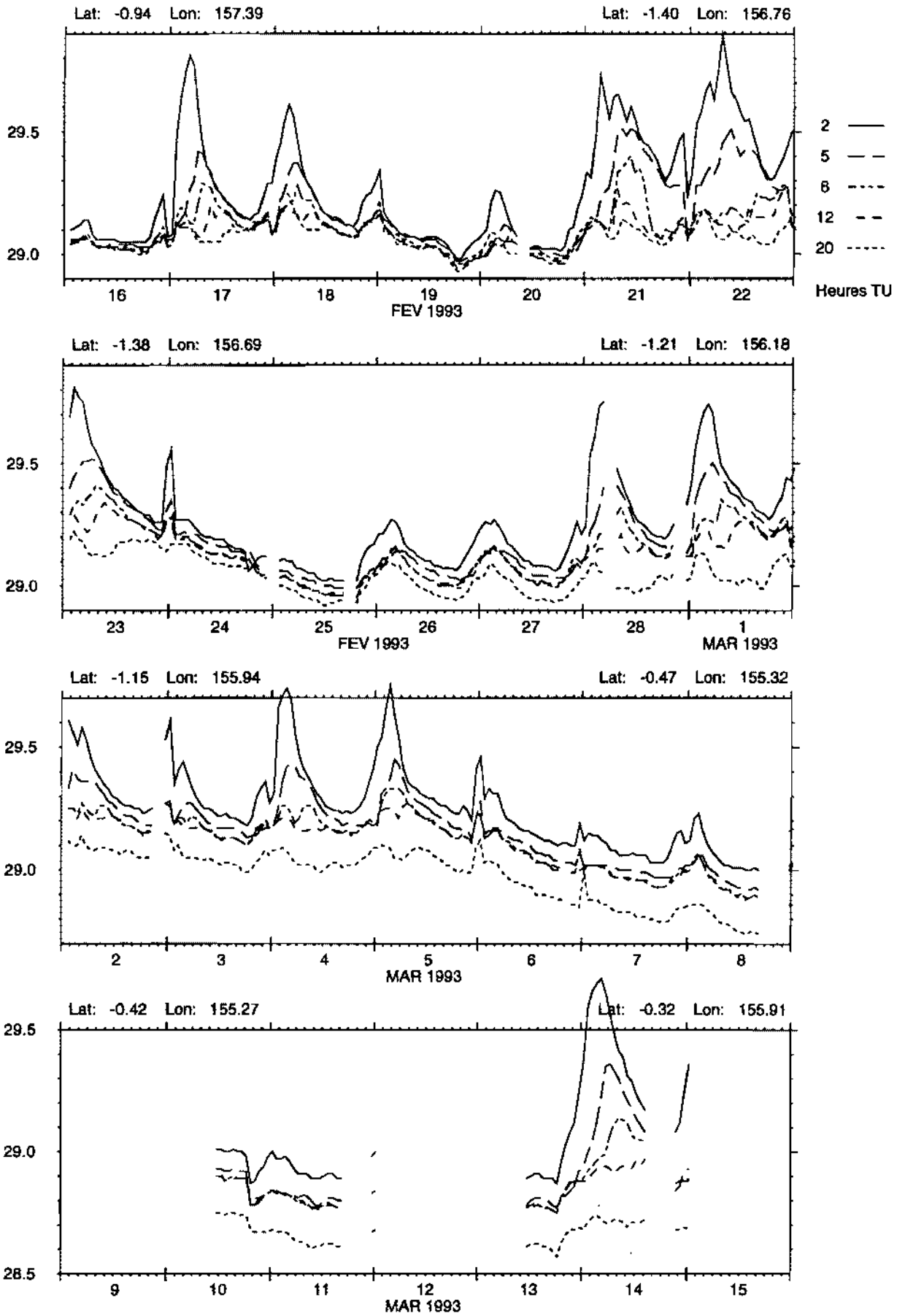
17625



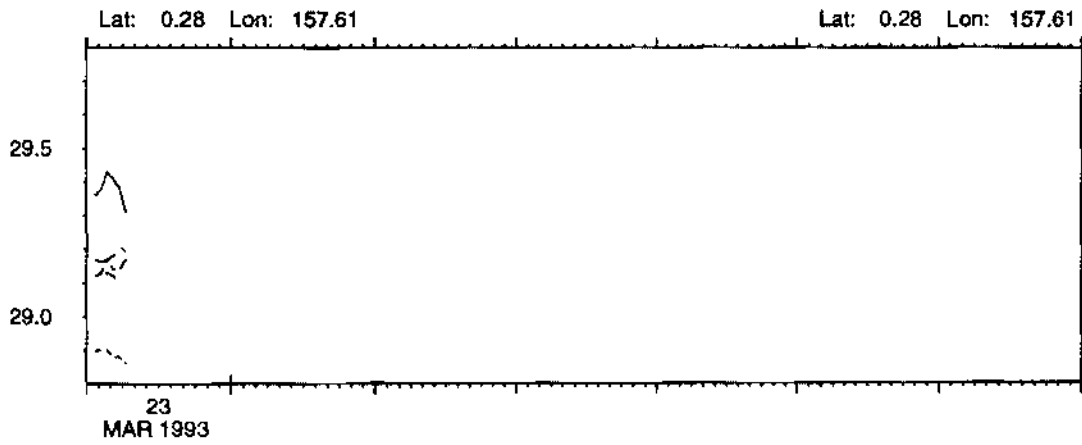
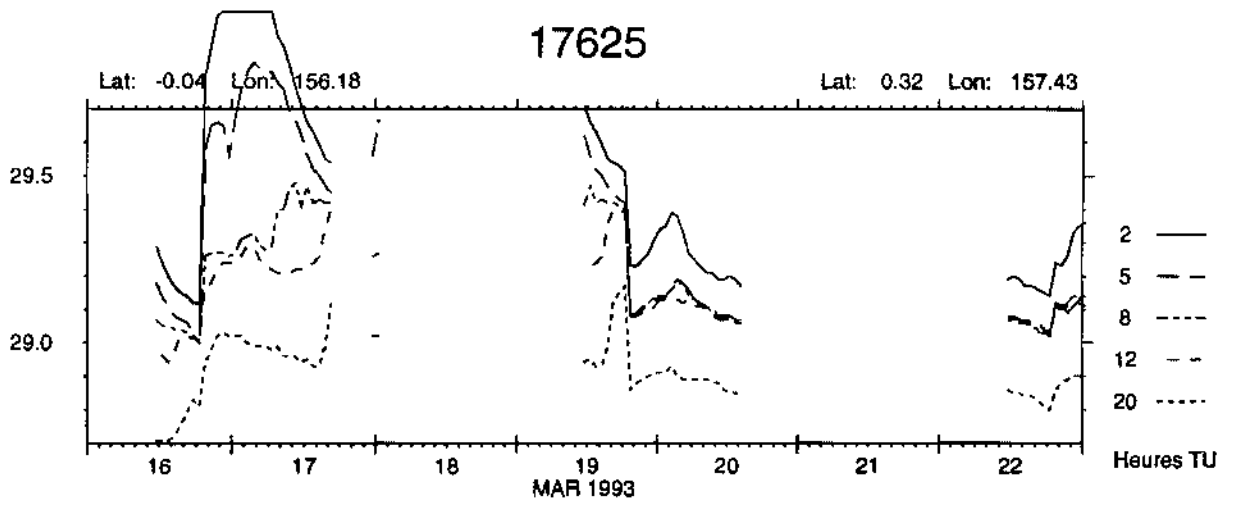
17625



17625



17625



Bouée dérivante BODEGA n° 17626

Date début et position : 18/01/93 à 1°N, 156.06°E

Launch date and position

Date fin et position : 30/08/93 à 3.87°N, 125.56°E

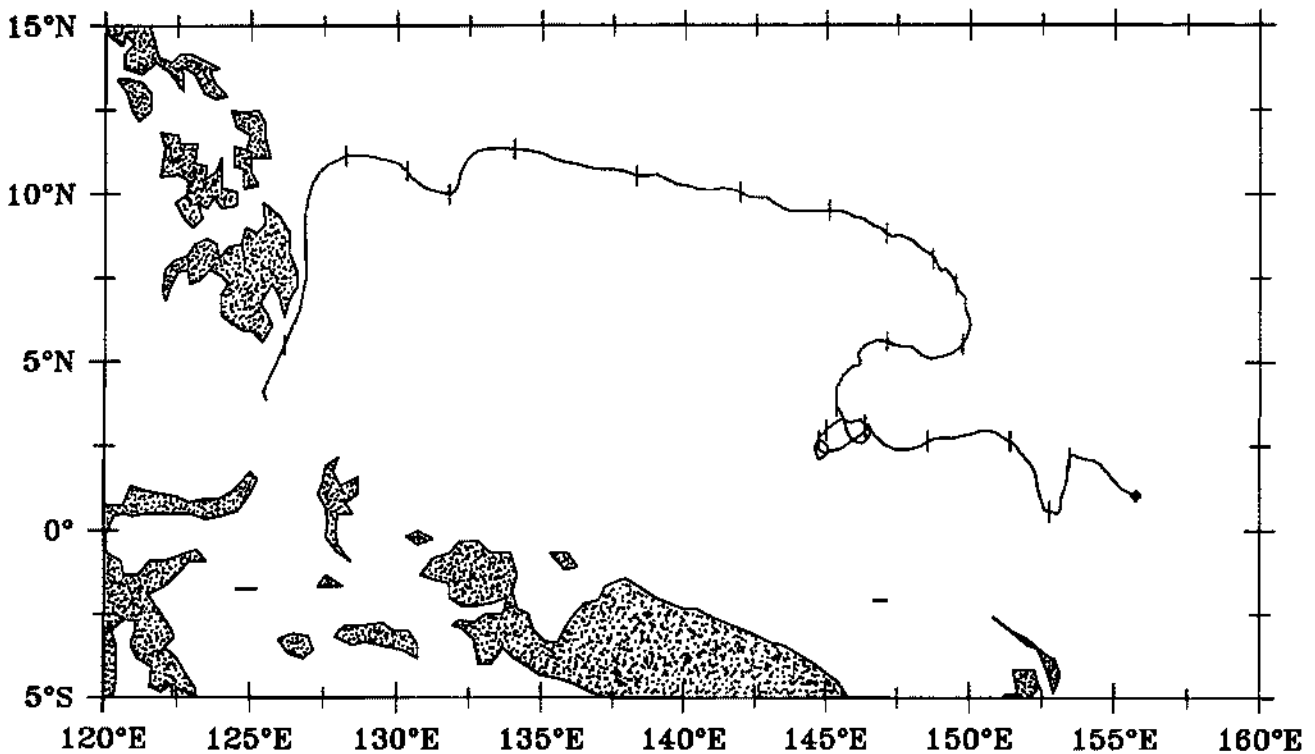
End date and position

Corrections effectuées pour compenser les dérives de capteurs :

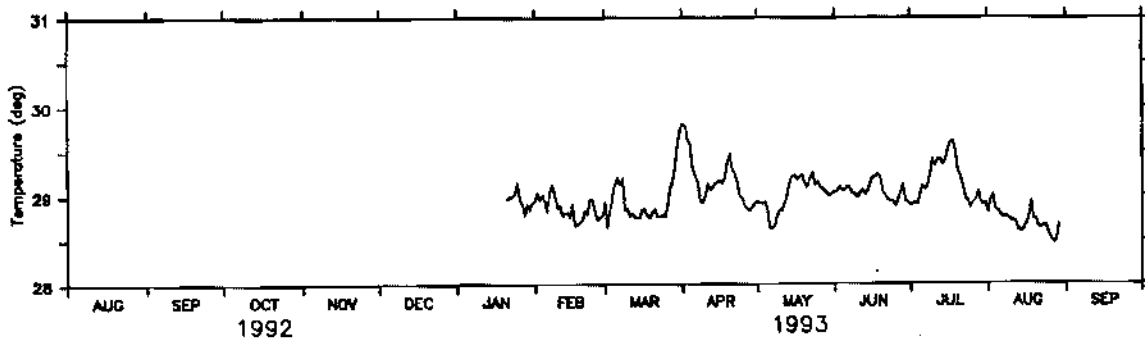
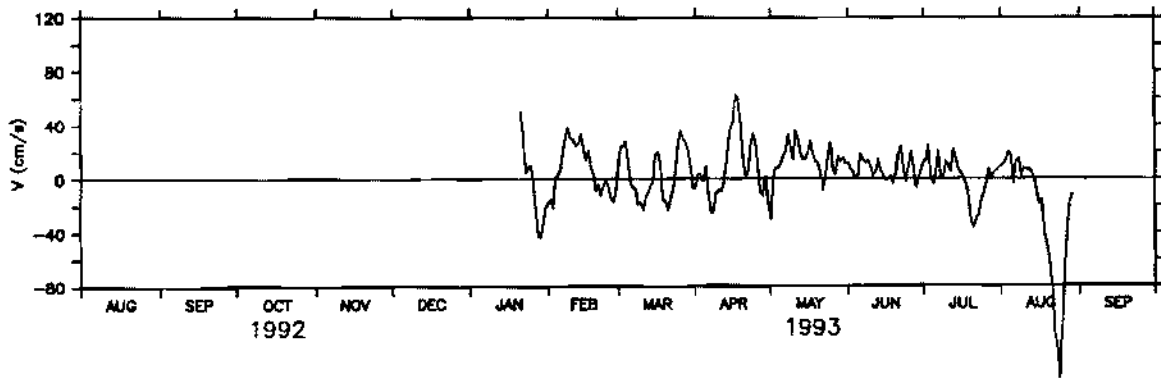
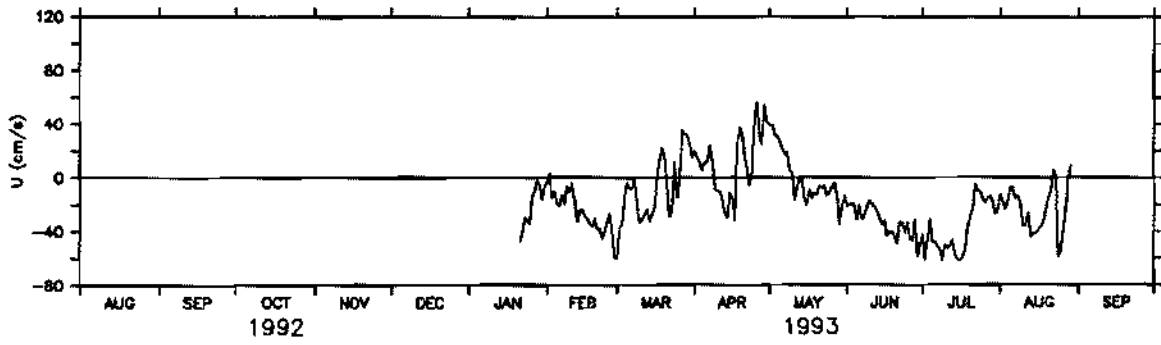
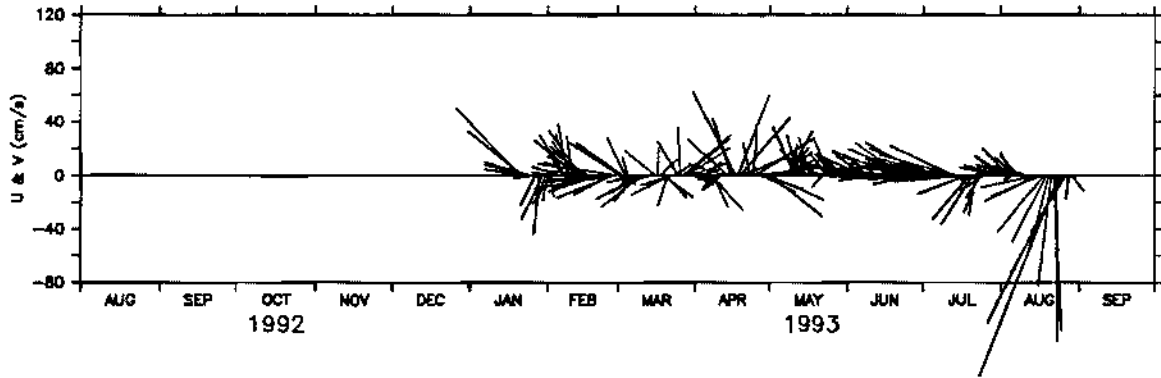
Proposed corrections to compensate sensor drifts

. cycle 2 (19/01/93) :	-0.04 capteur 20m
. cycle 68 (11/04/93) :	-0.02 capteur 5m
. cycle 75 (02/05/93) :	-0.02 capteur 5m
. cycle 81 (20/05/93) :	-0.03 capteur 5m
. cycle 87 (07/06/93) :	-0.02 capteur 5m
. cycle 90 (14/06/93) :	-0.01 capteur 5m
. cycle 94 (28/06/93) :	+0.00 capteur 5m
. cycle 104 (28/07/93) :	+0.05 capteur 5m

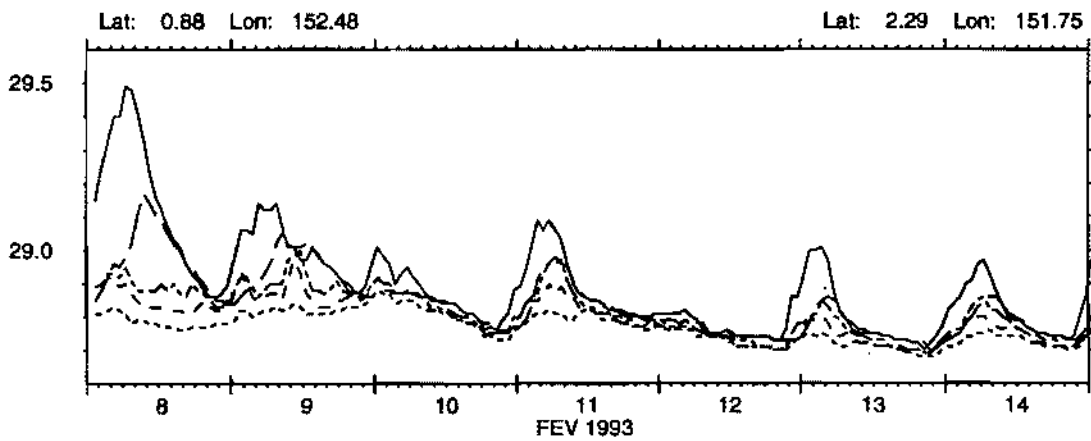
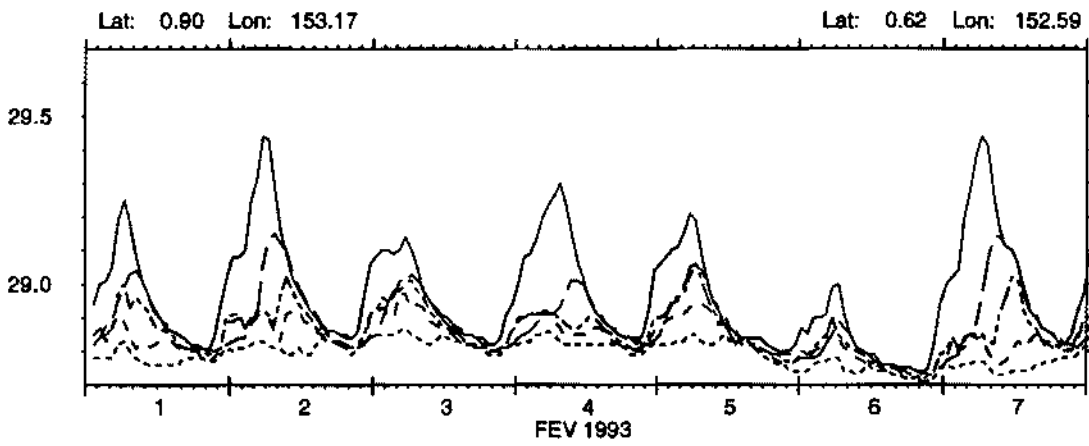
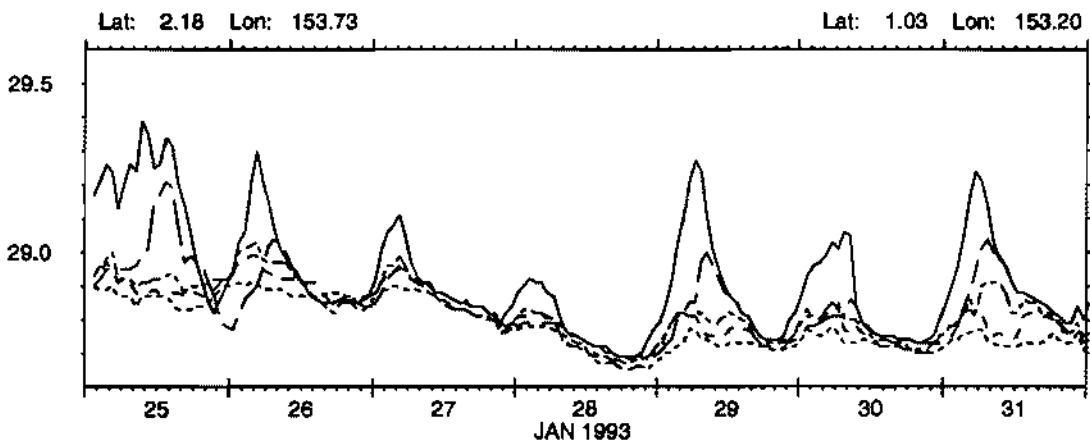
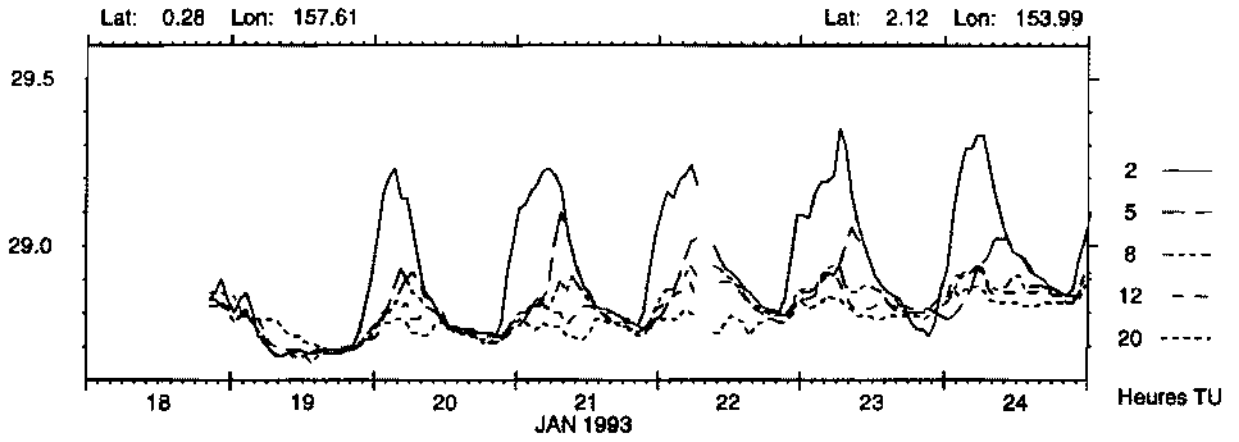
17626



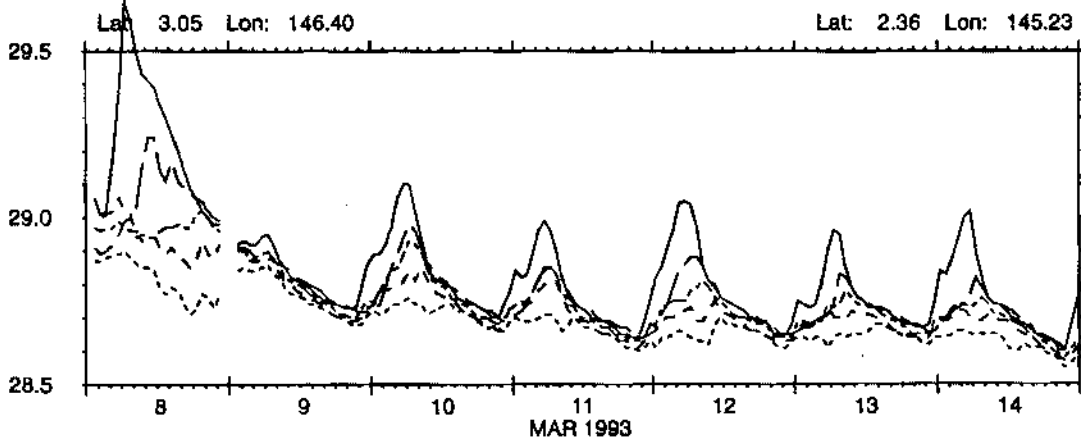
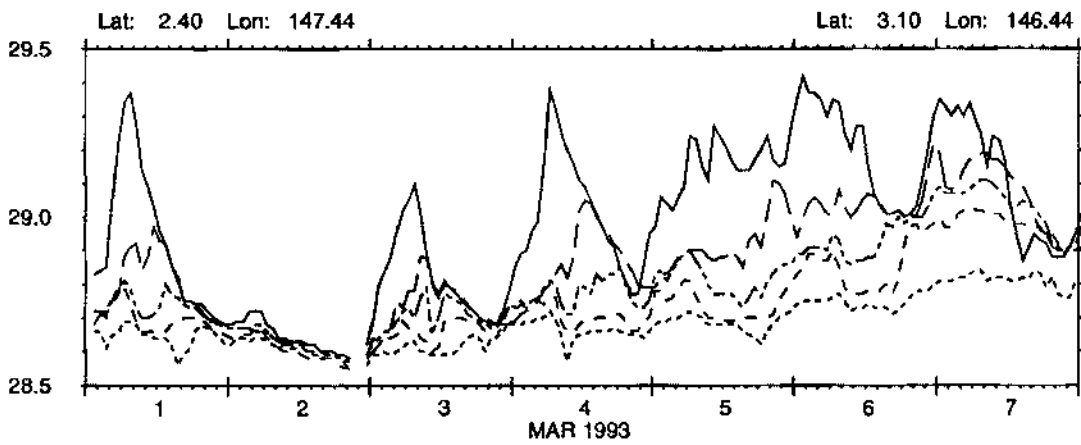
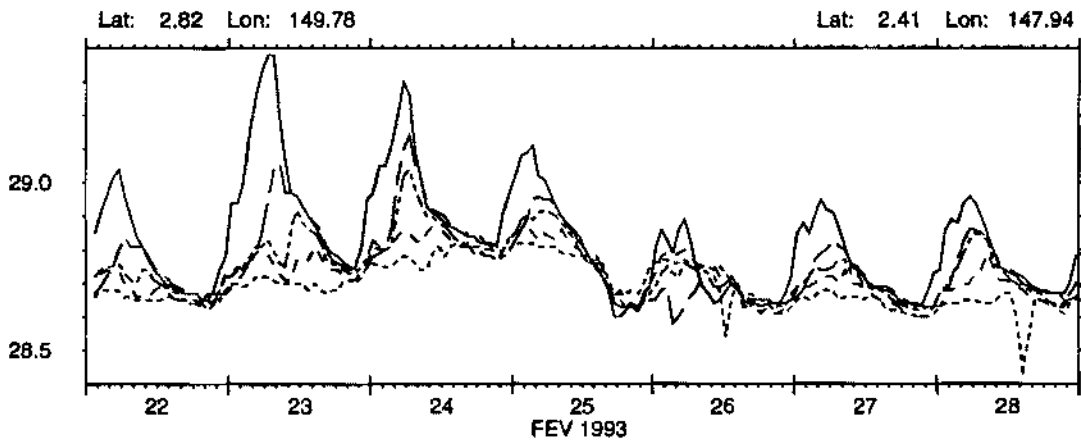
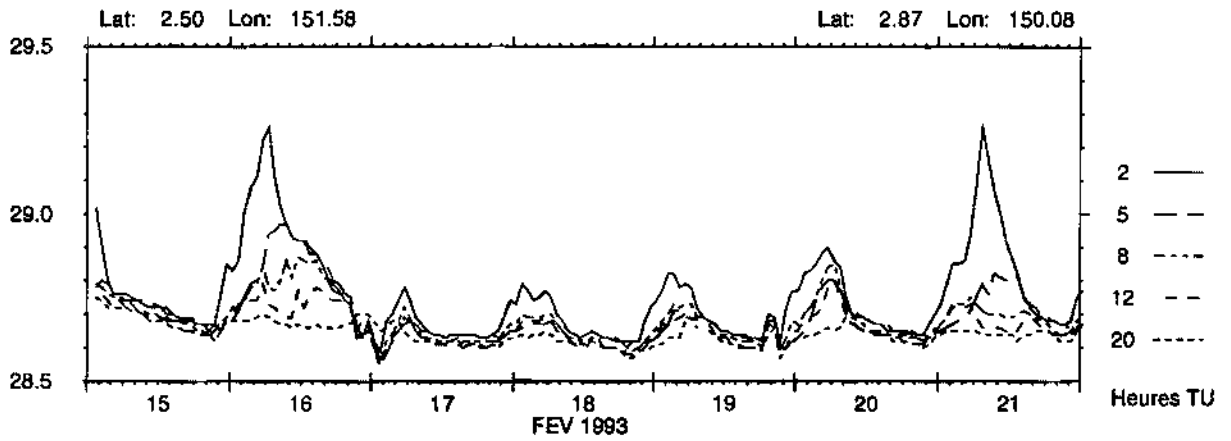
N°17626



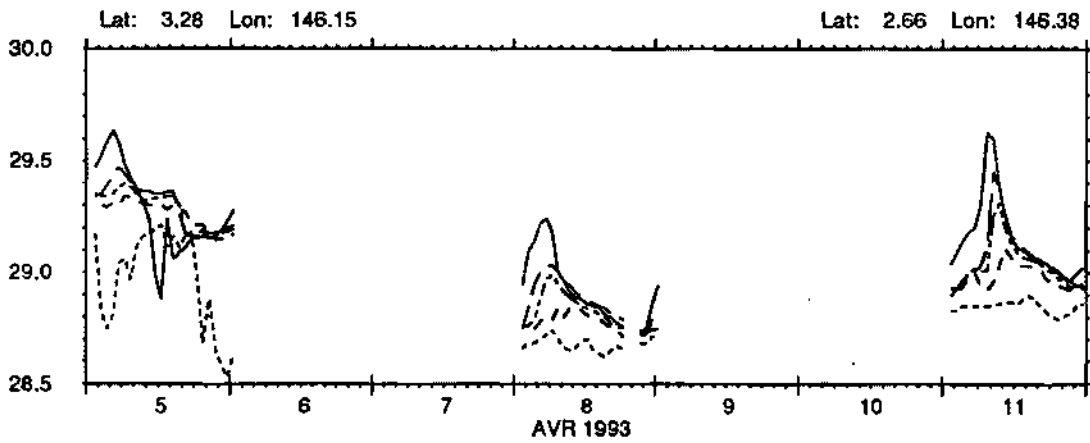
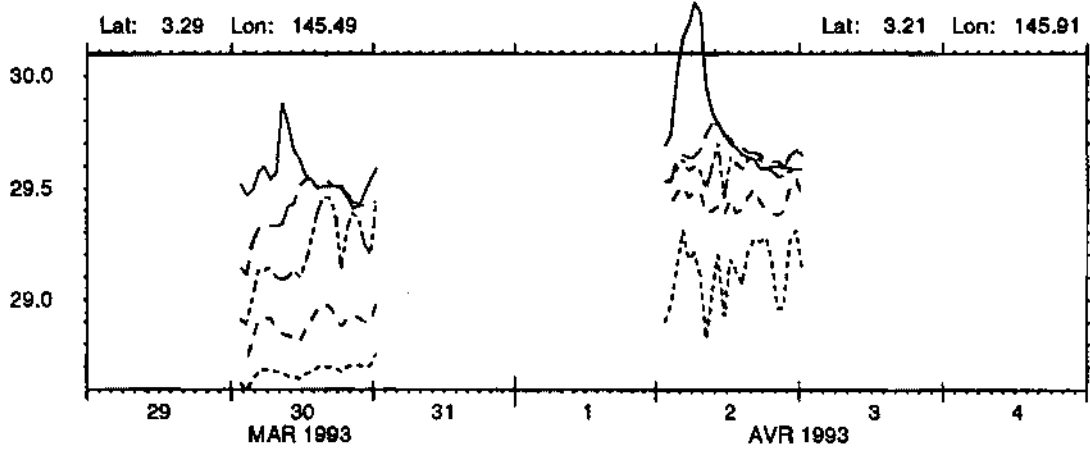
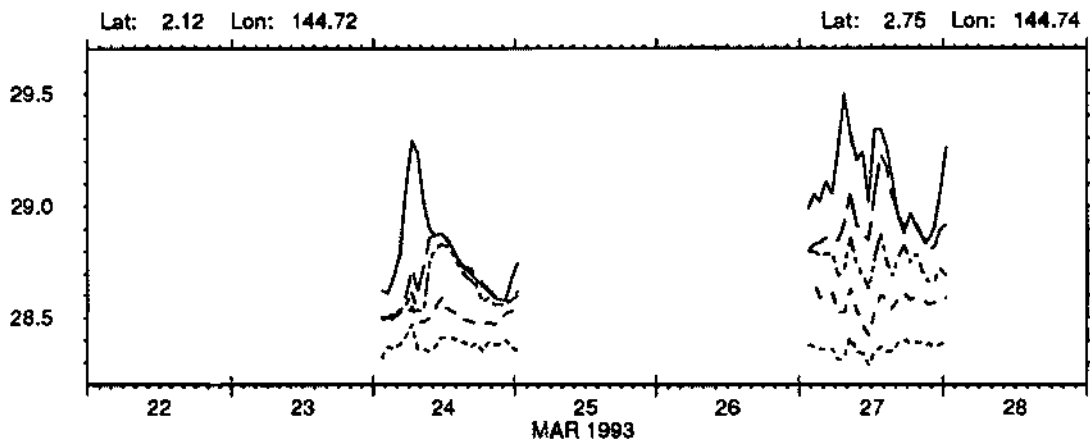
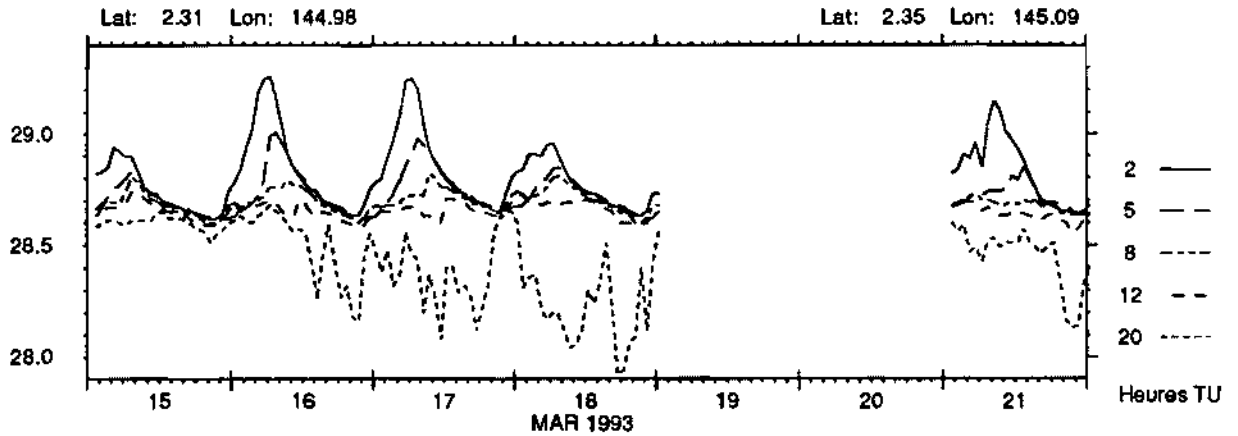
17626



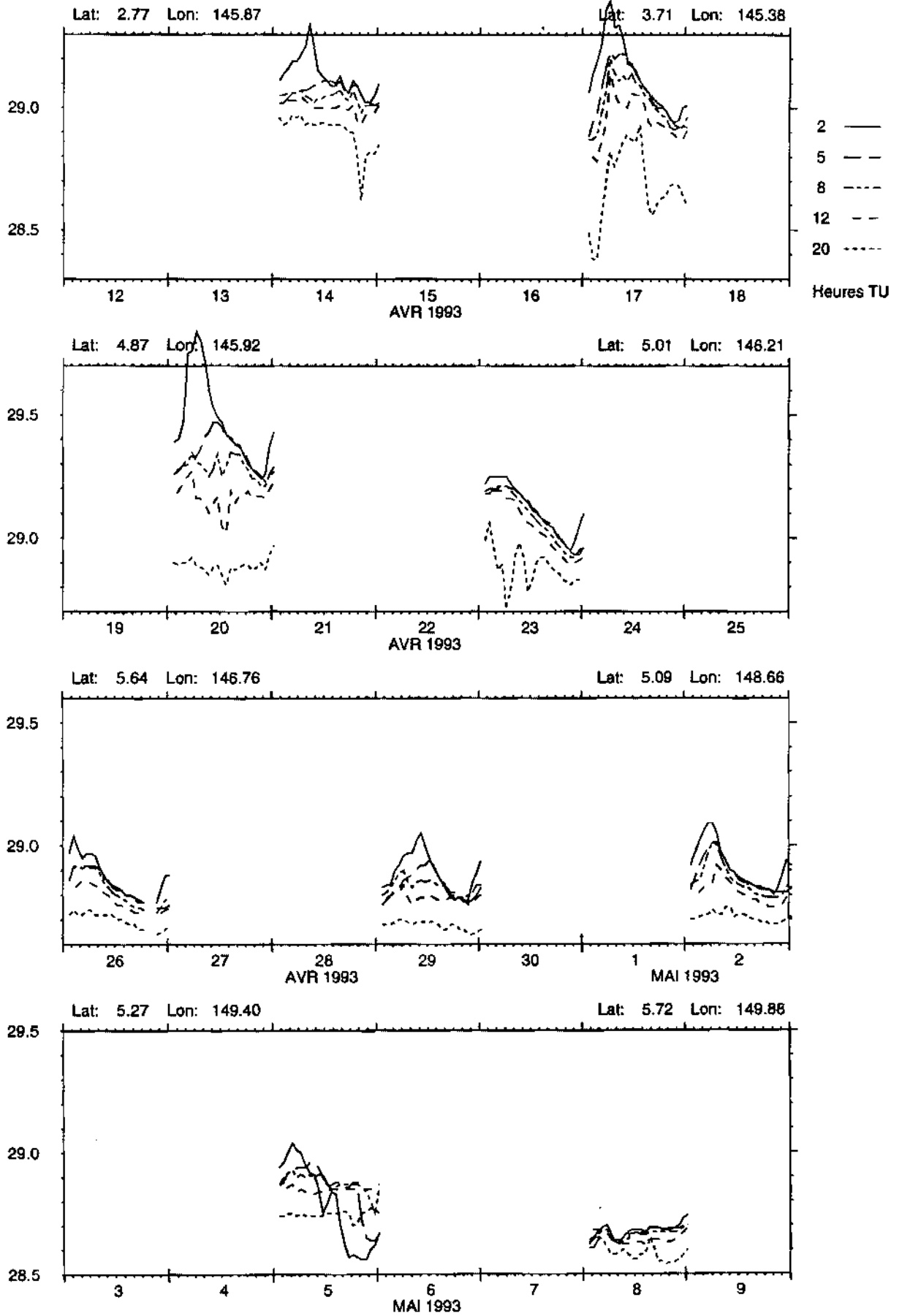
17626



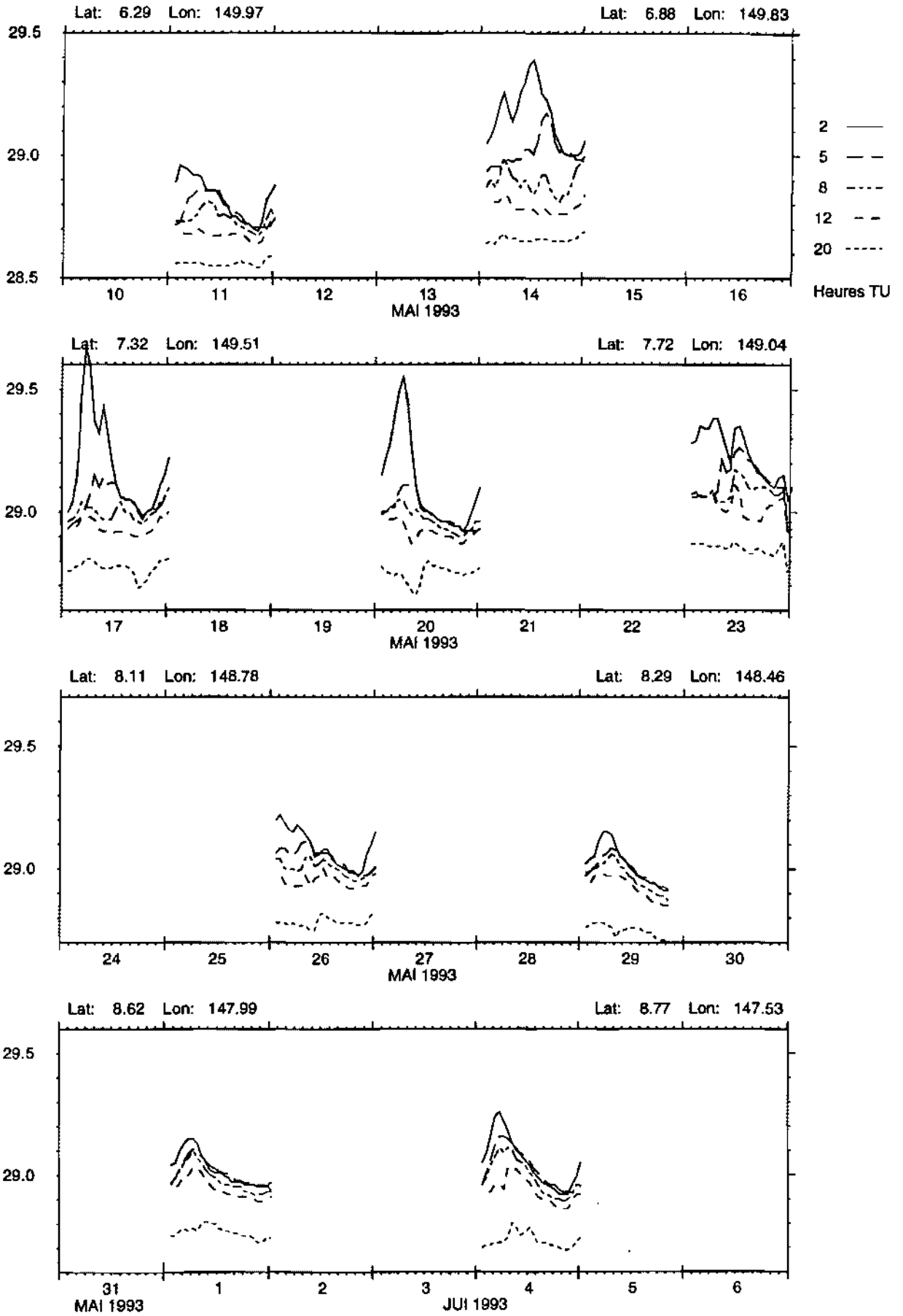
17626



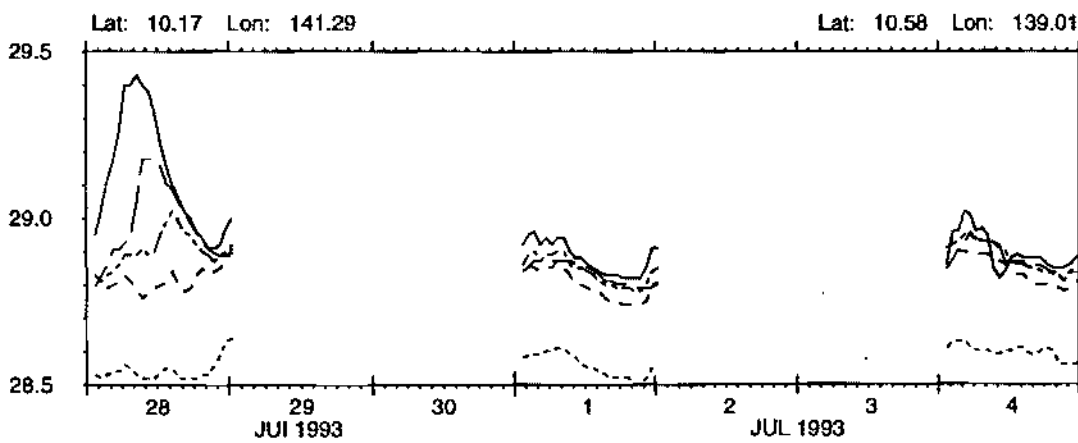
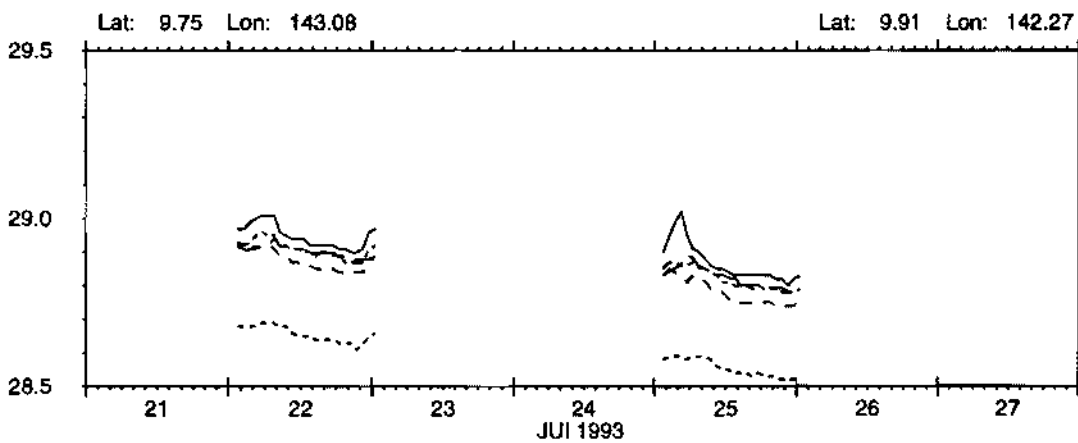
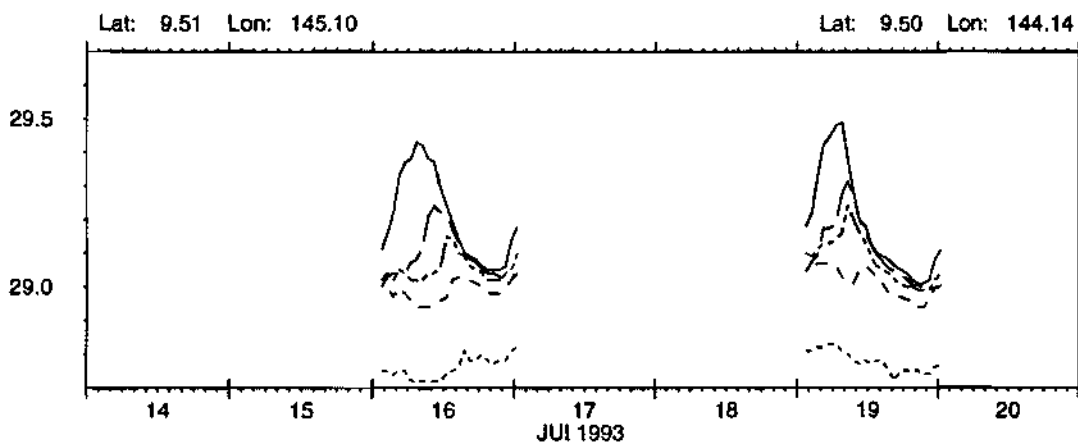
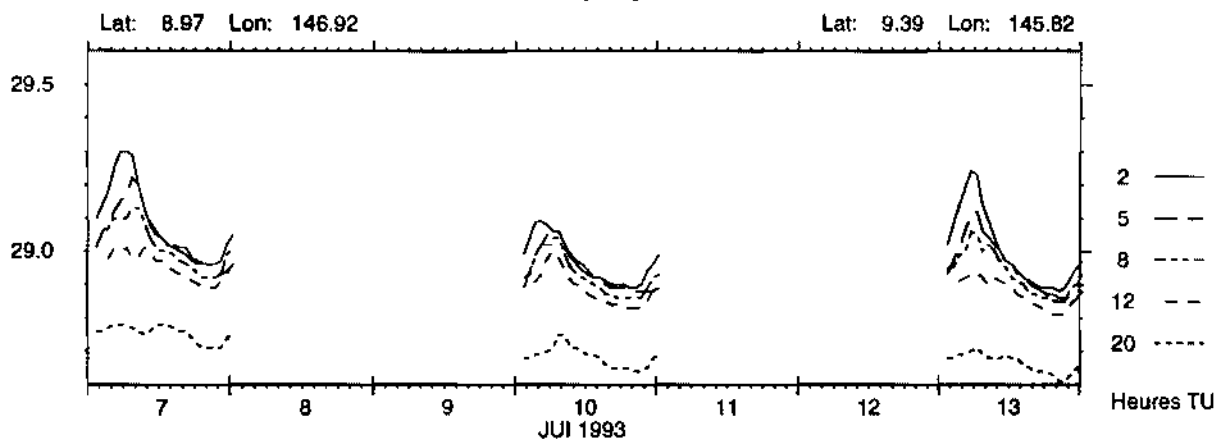
17626



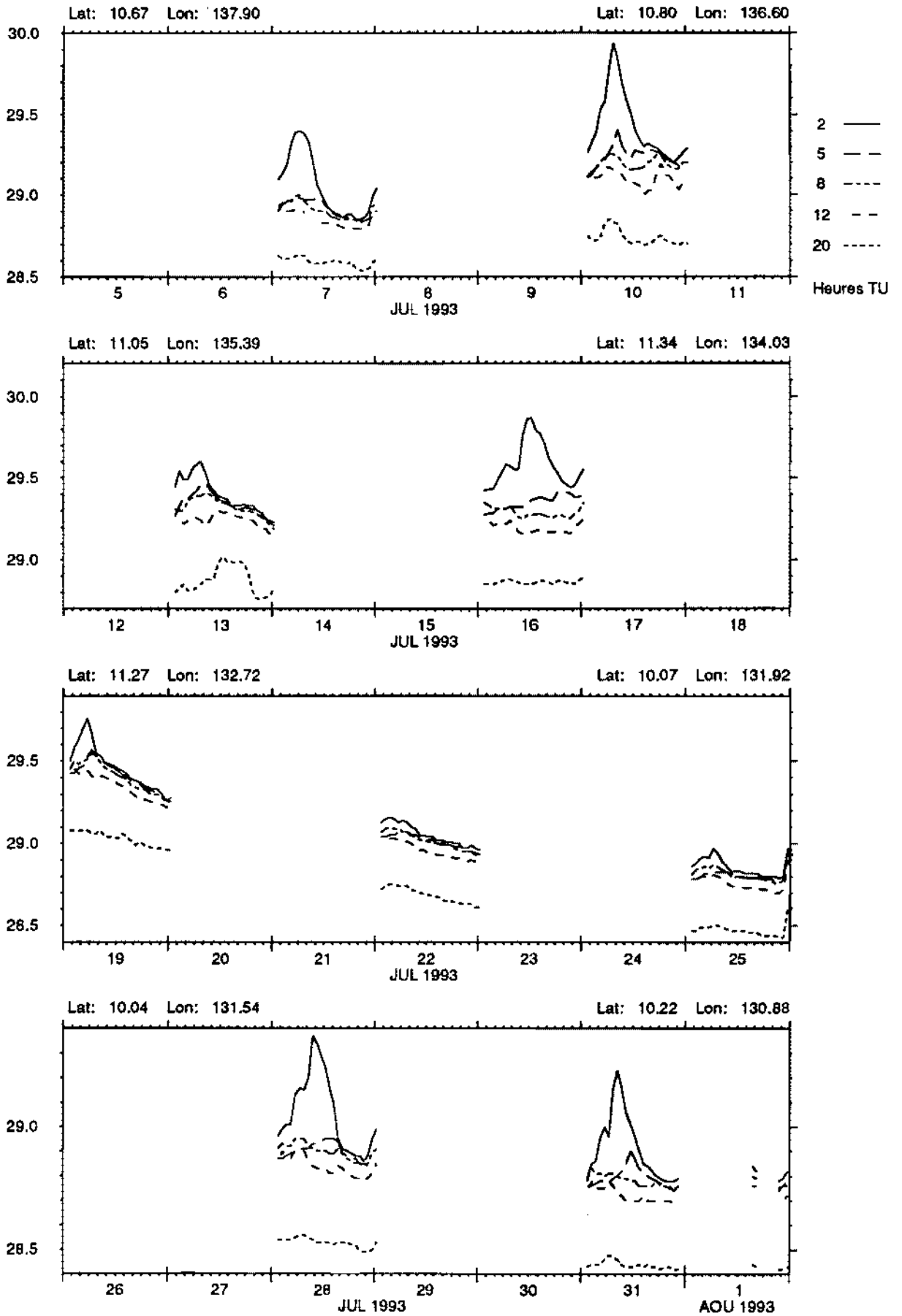
17626



17626



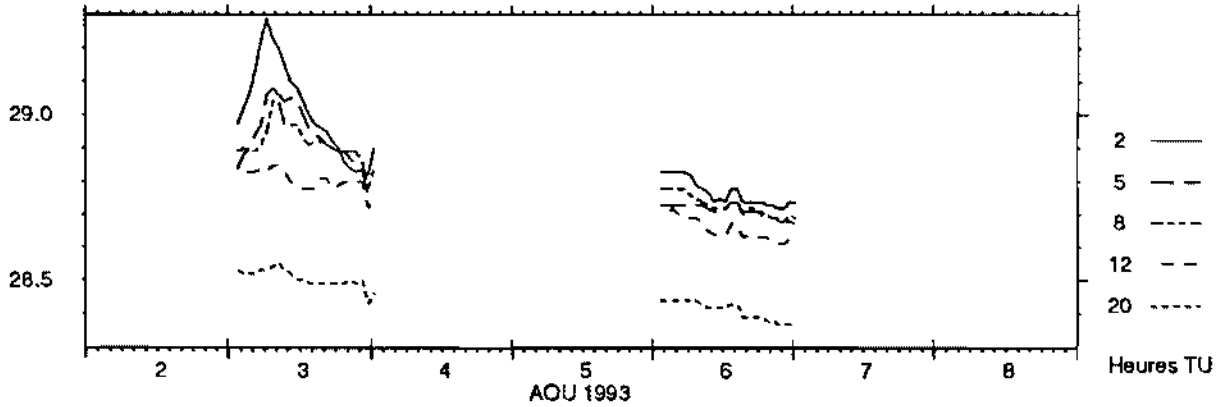
17626



17626

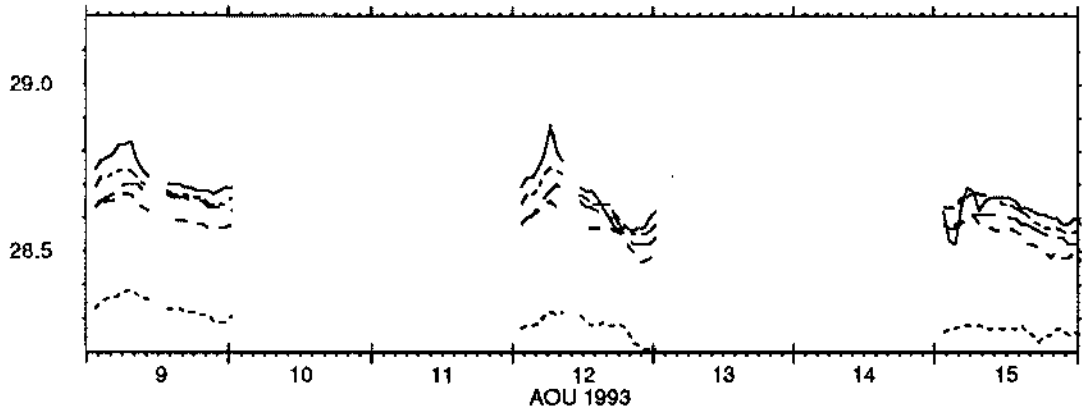
Lat: 10.40 Lon: 130.61

Lat: 10.73 Lon: 130.29



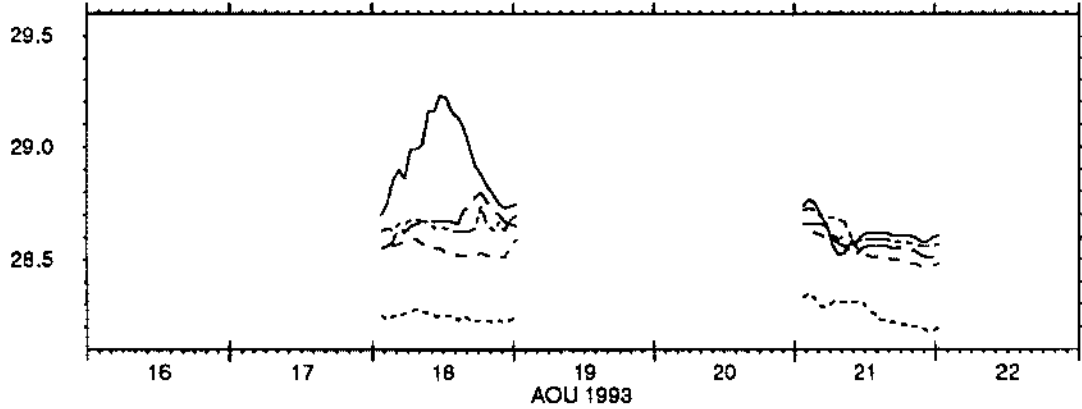
Lat: 10.93 Lon: 129.95

Lat: 11.14 Lon: 128.25



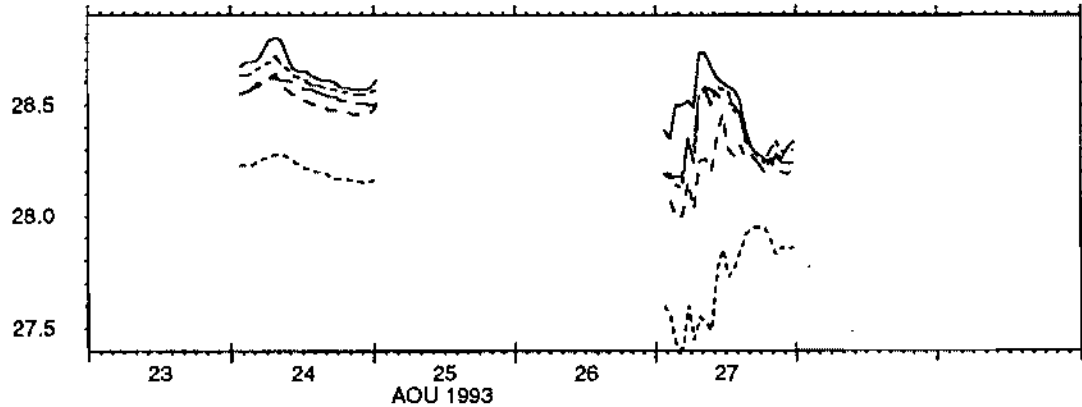
Lat: 10.67 Lon: 127.36

Lat: 9.36 Lon: 126.85



Lat: 6.55 Lon: 126.67

Lat: 4.35 Lon: 125.57



Bouée dérivante BODEGA n° 17627

Date début et position : 02/01/93 à 2.°S, 156.08°E

Launch date and position

Date fin et position : 08/06/93 à 2.64°S 150.90°E

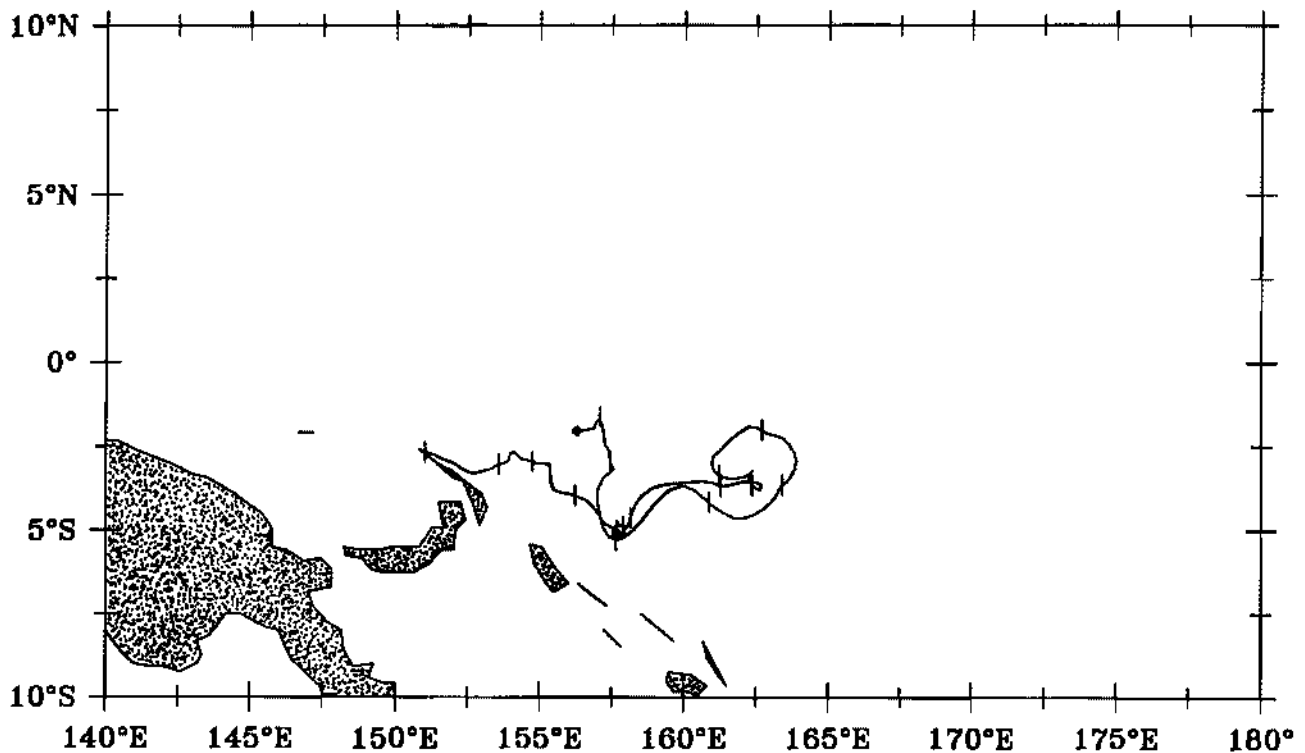
End date and position

Corrections effectuées pour compenser les dérives de capteurs :

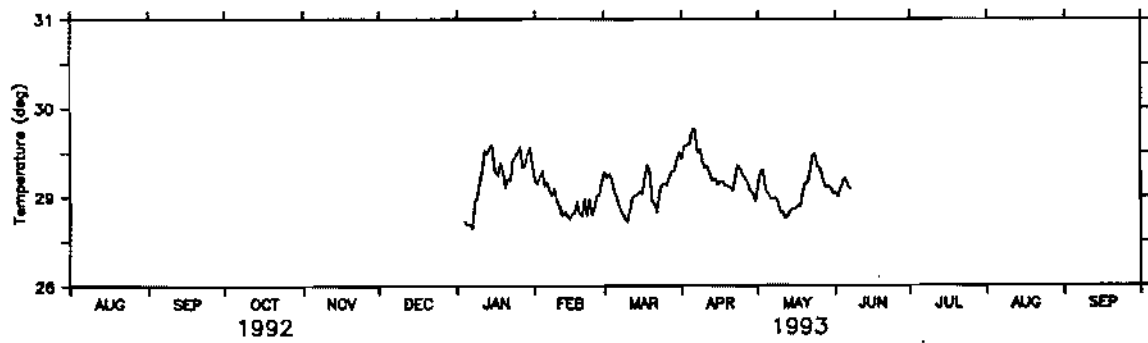
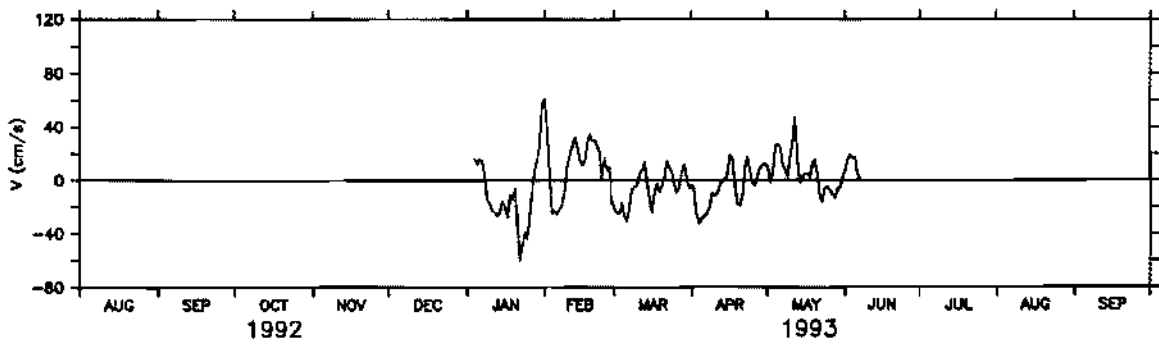
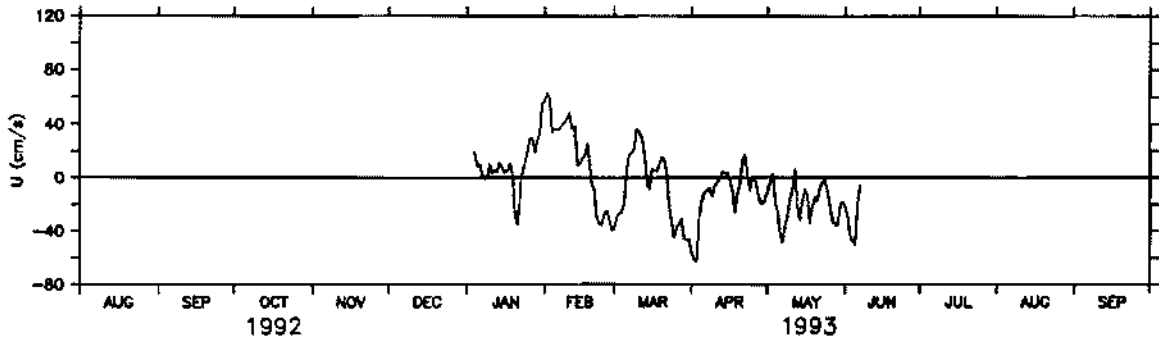
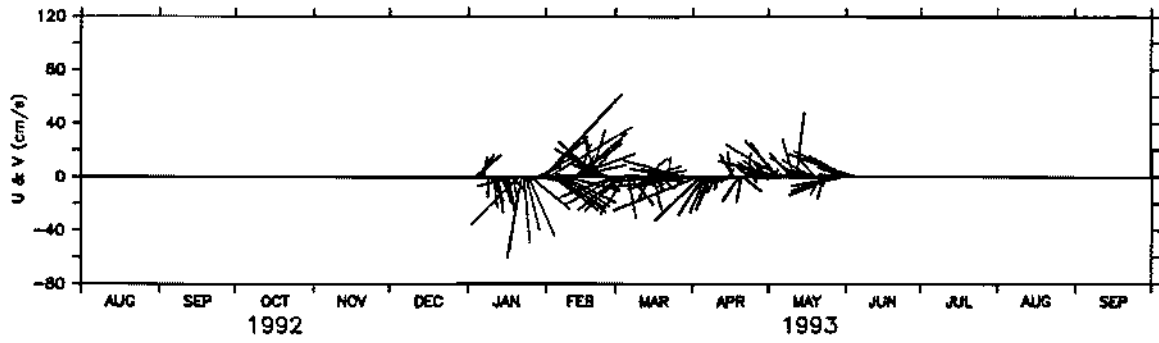
Proposed corrections to compensate sensor drifts

- . cycle 2 (03/01/93) : +0.02 capteur 5m
- . cycle 63 (13/03/93) : +0.01 capteur 5m
- . cycle 72 (09/04/93) : +0.03 capteur 12m
- . cycle 86 (21/05/93) : +0.06 capteur 12m
- . cycle 92 (08/06/93) : -0.01 capteur 5m

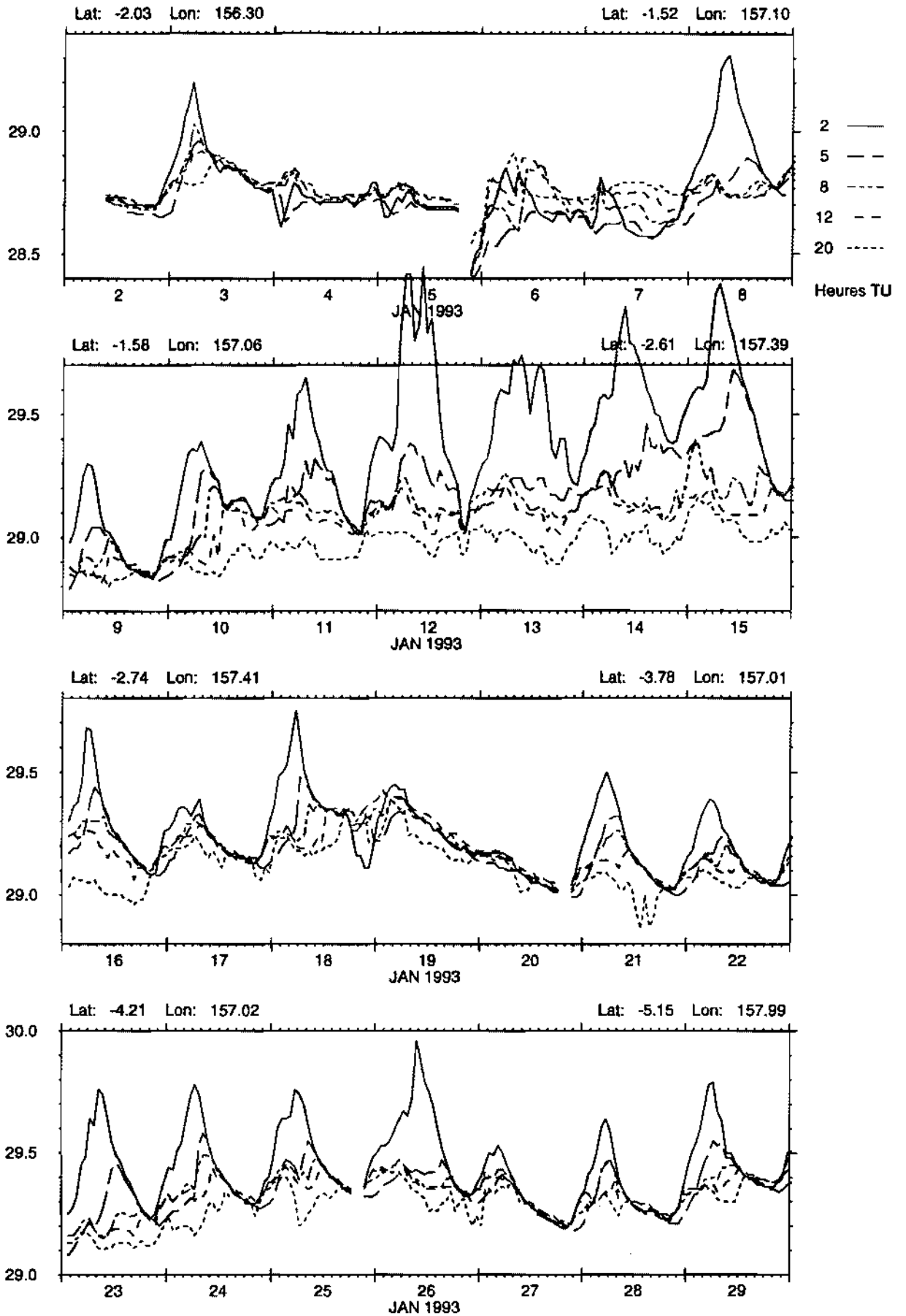
17627



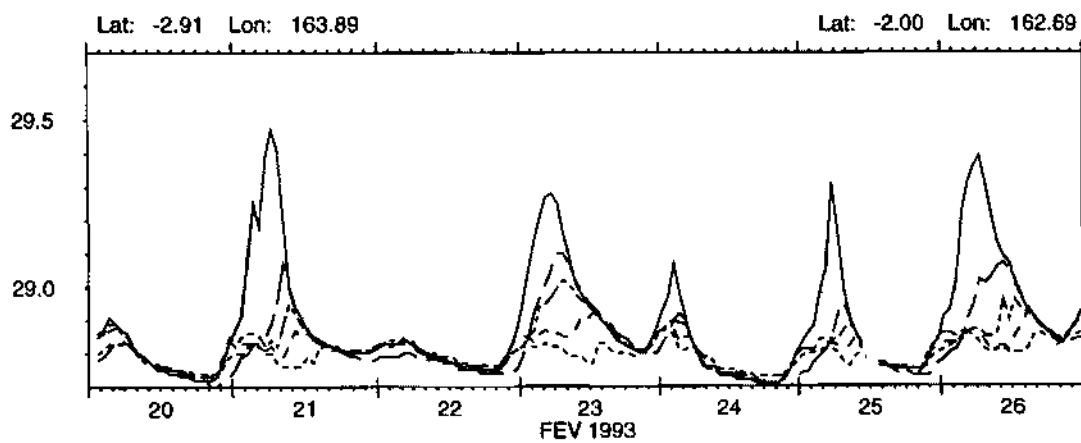
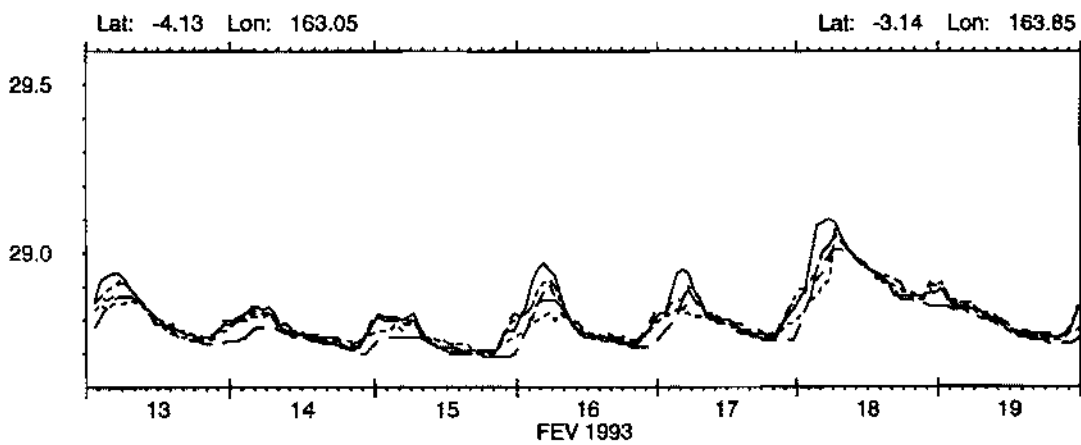
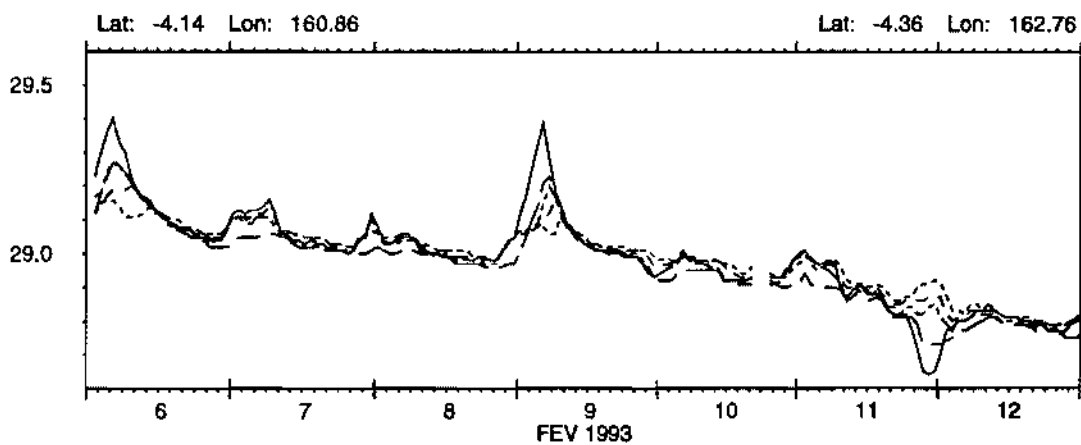
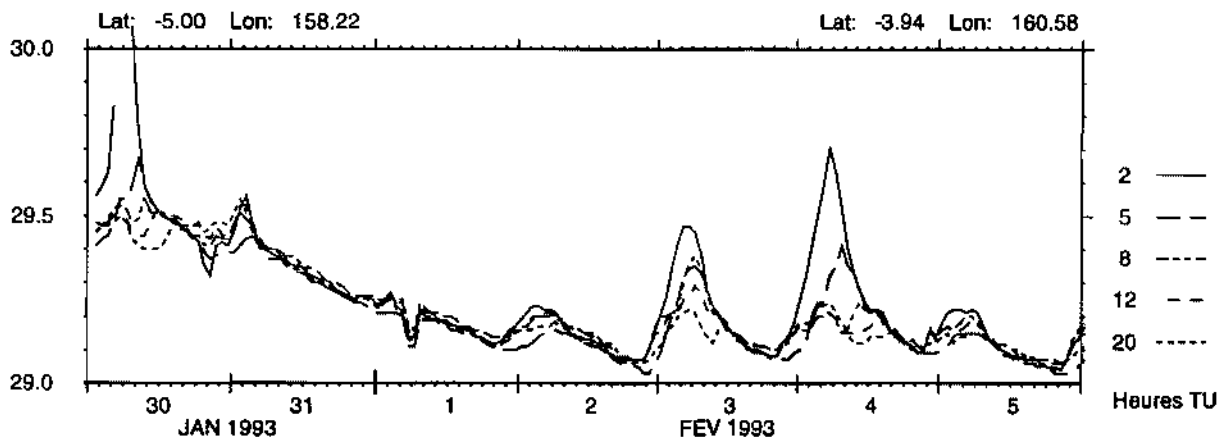
N°17627



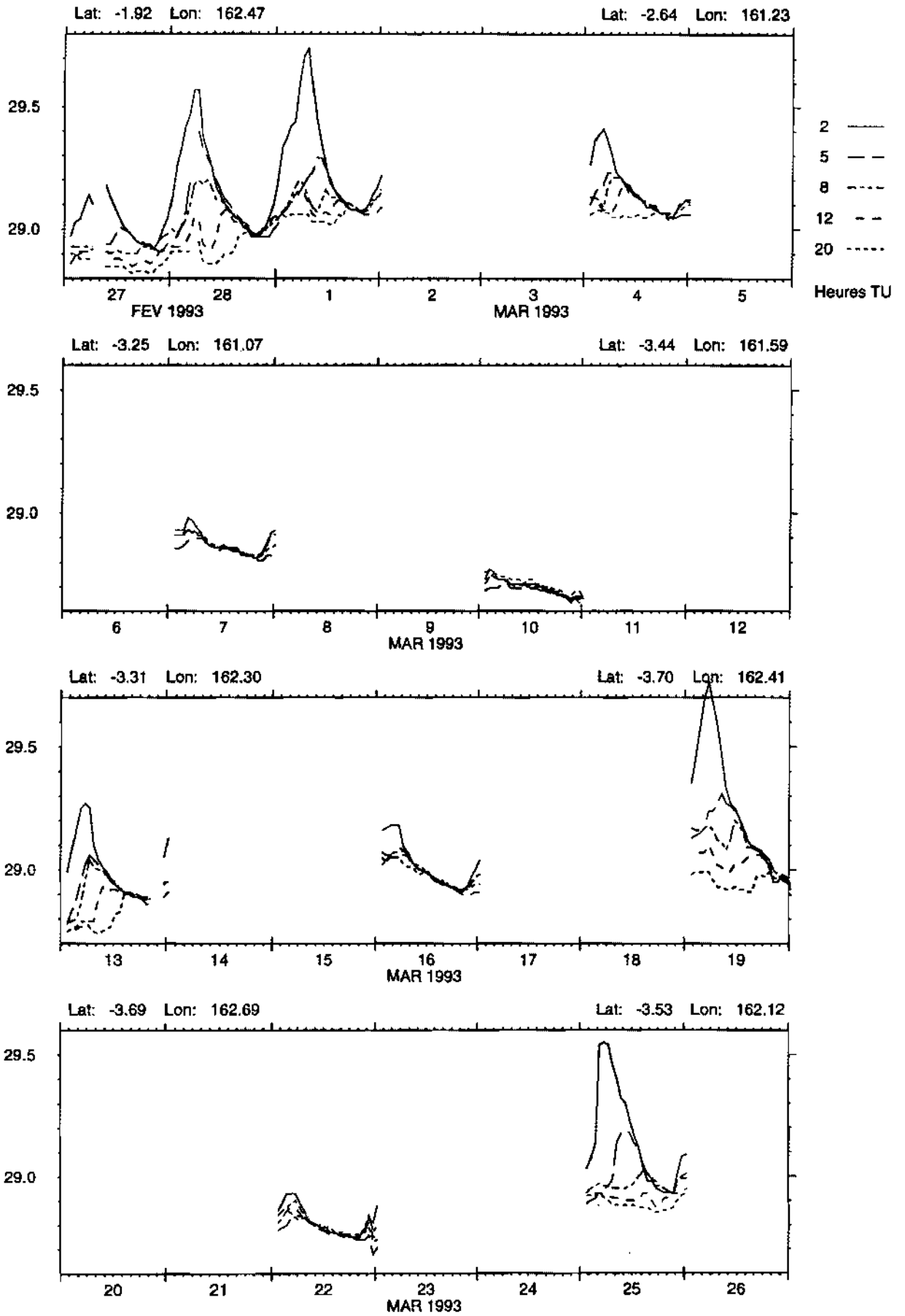
17627



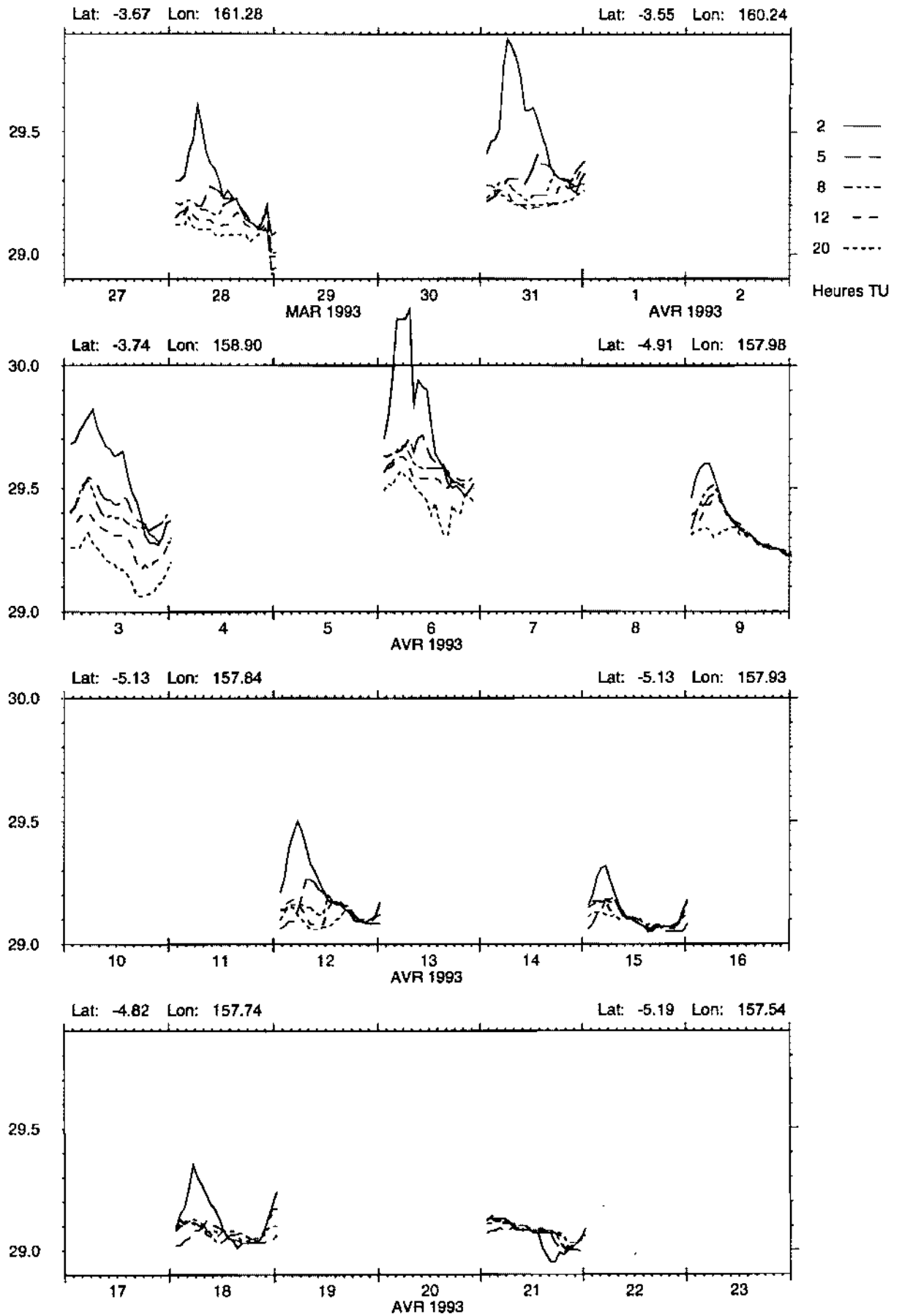
17627



17627



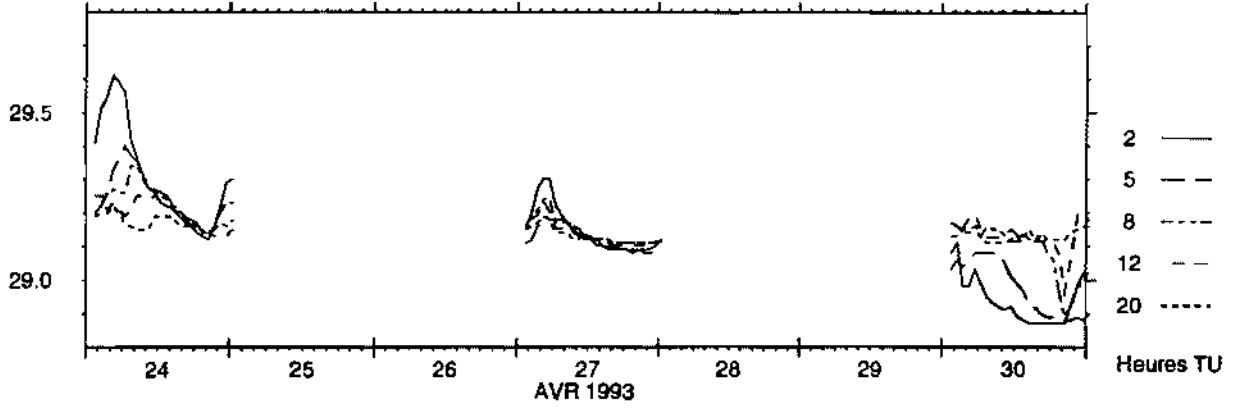
17627



17627

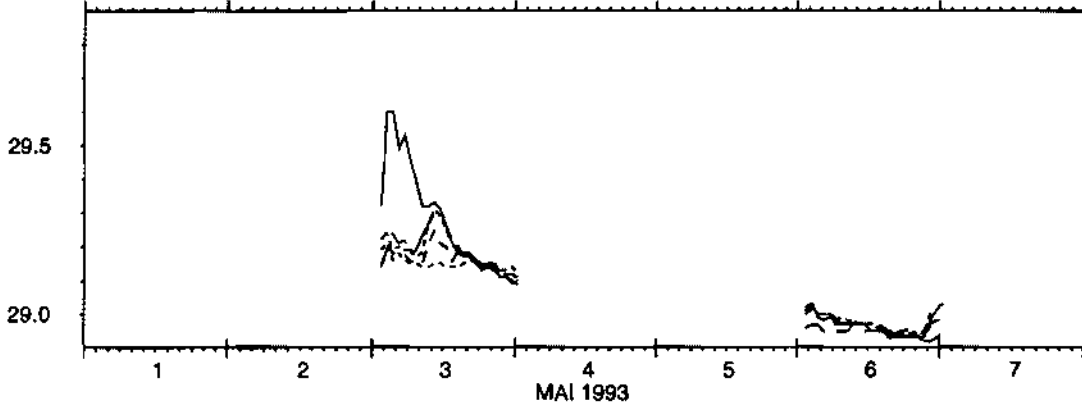
Lat: -4.97 Lon: 157.72

Lat: -4.78 Lon: 157.26



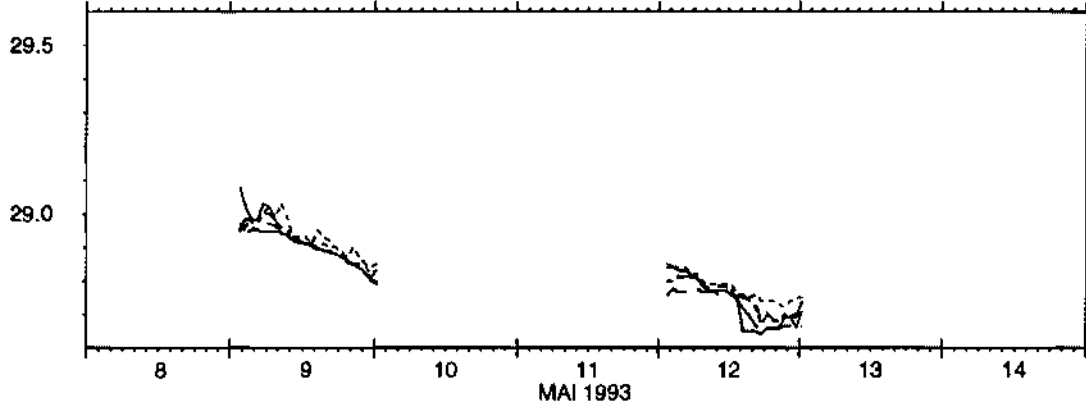
Lat: -4.65 Lon: 157.12

Lat: -4.10 Lon: 156.63



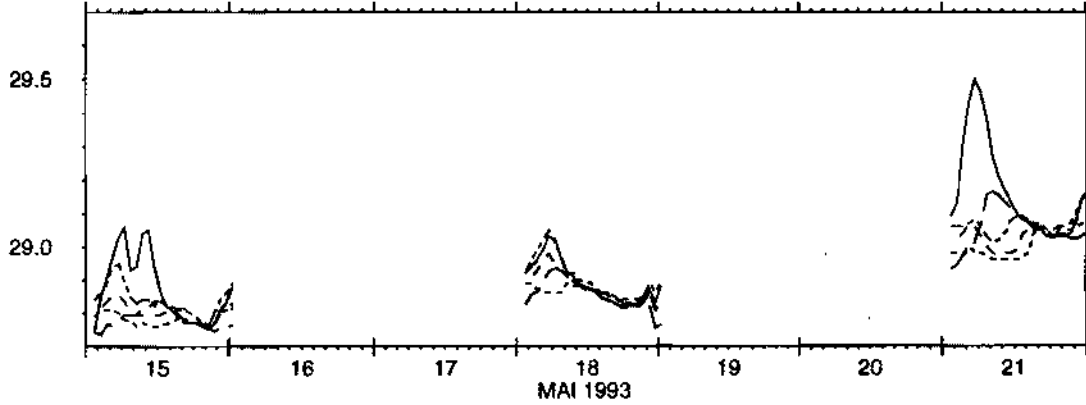
Lat: -3.86 Lon: 155.67

Lat: -3.32 Lon: 155.39

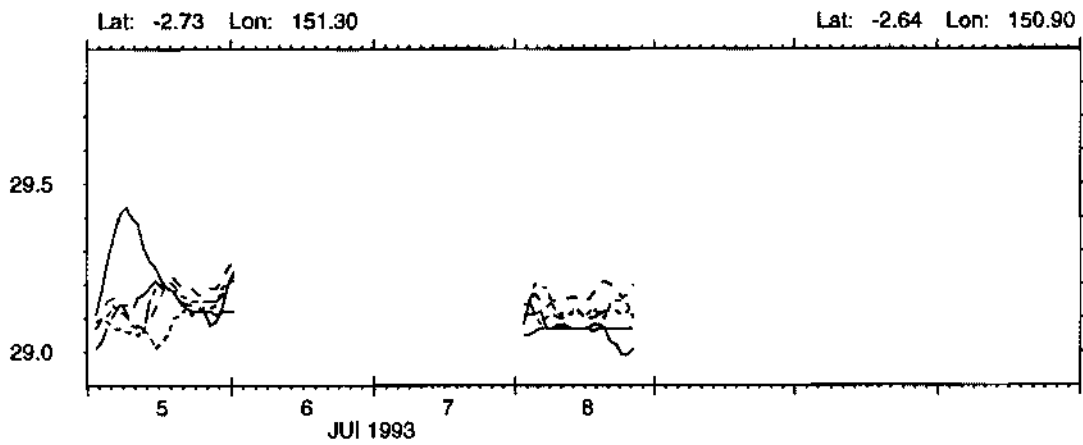
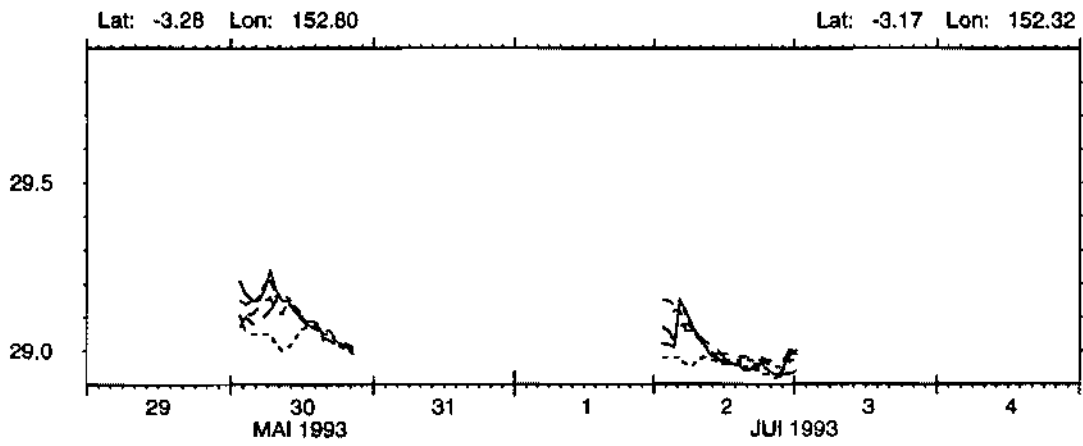
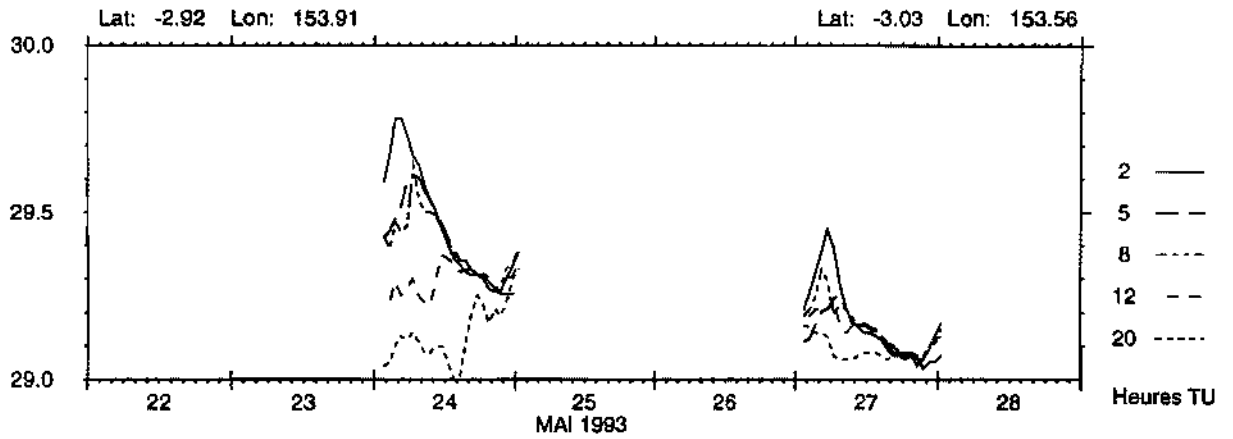


Lat: -3.01 Lon: 154.93

Lat: -2.66 Lon: 154.08



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Bouée dérivante BODEGA n° 17628

Date début et position : 19/01/93 à 2.48°S, 156.06°E

Launch date and position

Date fin et position : 30/10/93 à 1.62°S, 142.16°E

End date and position

Corrections effectuées pour compenser les dérives de capteurs :

Proposed corrections to compensate sensor drifts

. cycle 5 (23/01/93) : -0.01 capteur 8m

-0.02 capteur 12m

. cycle 24 (11/02/93) : +0.02 capteur 2m

-0.03 capteur 8m

. cycle 31 (18/02/93) : +0.04 capteur 2m

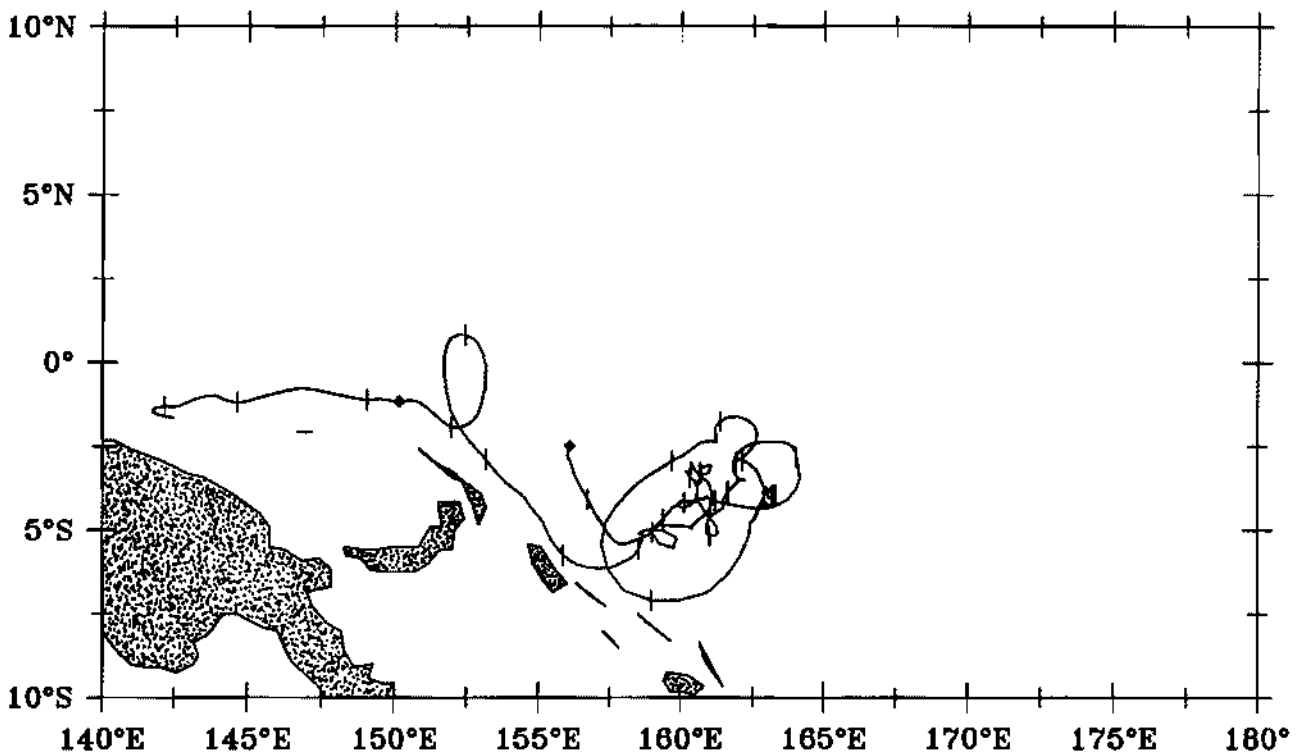
-0.05 capteur 8m

. cycle 36 (23/2/93) : +0.05 capteur 2m

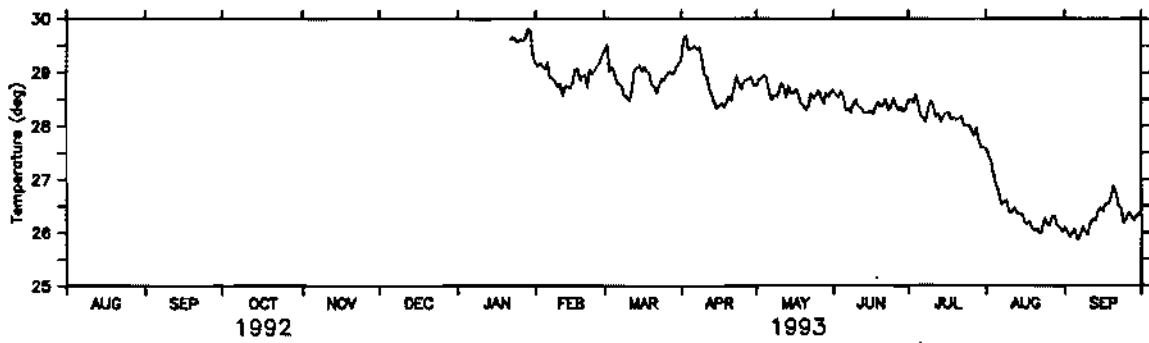
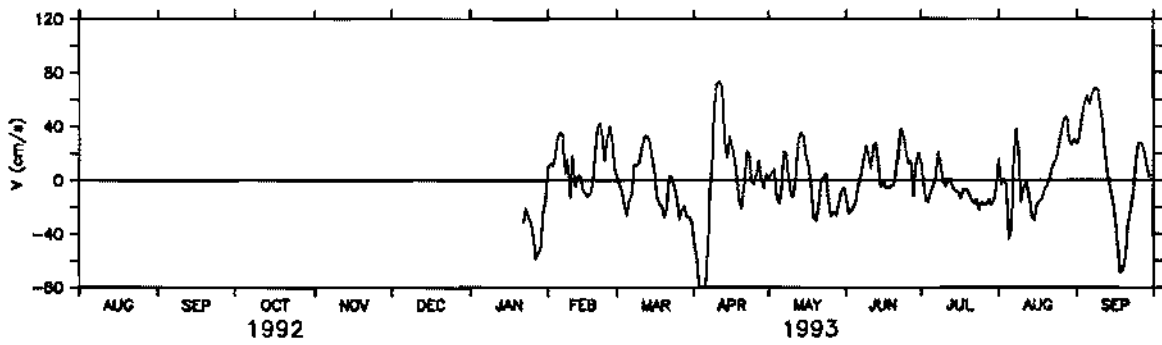
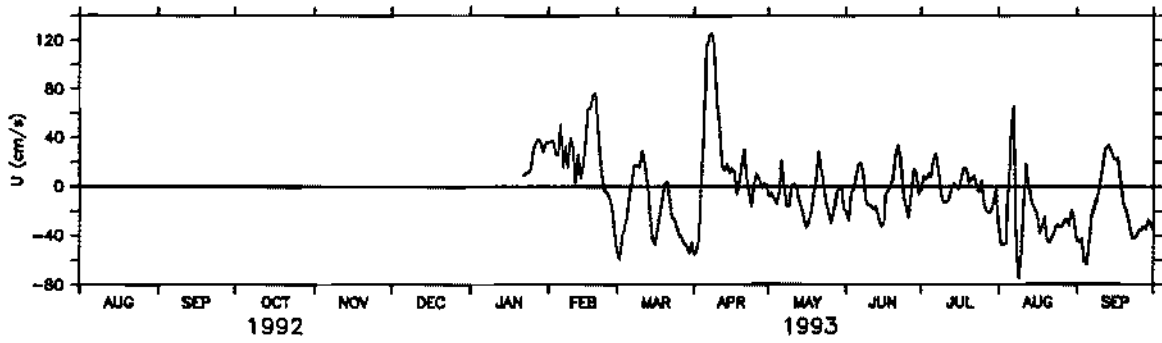
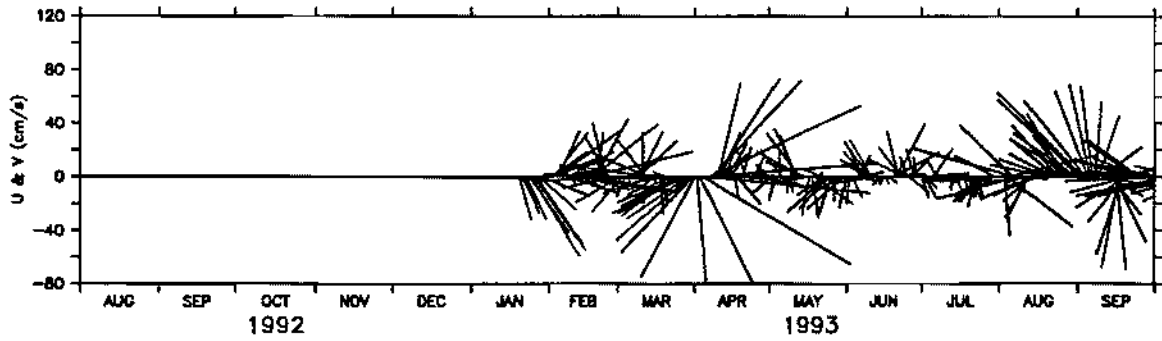
. cycle 56 (15/3/93) : +0.16 capteur 2m

Les données de température sont douteuses à partir d'avril 1993 et ne sont pas présentées. *Temperature data are not reliable and are not presented after April 1993*

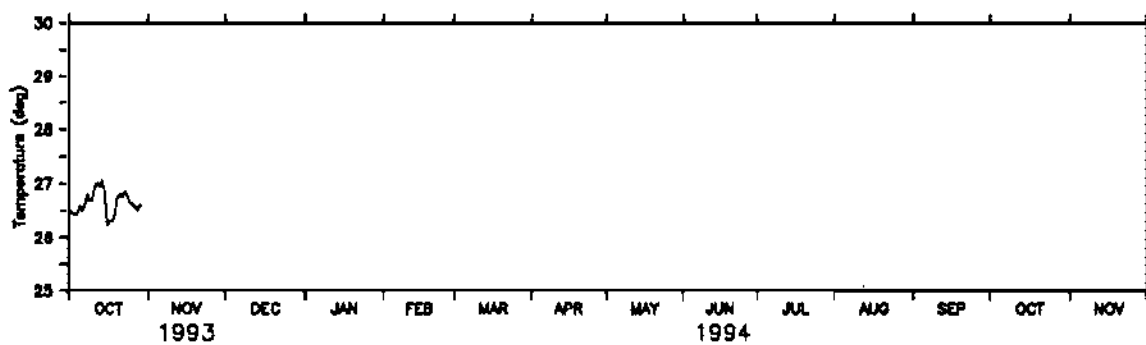
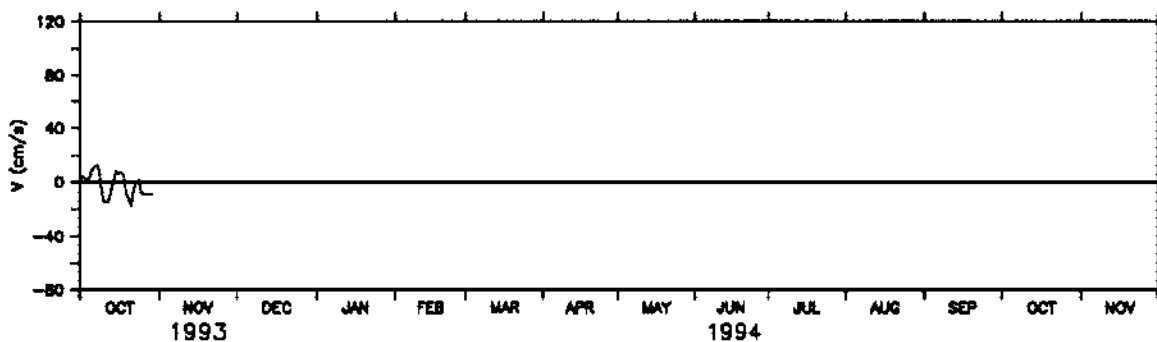
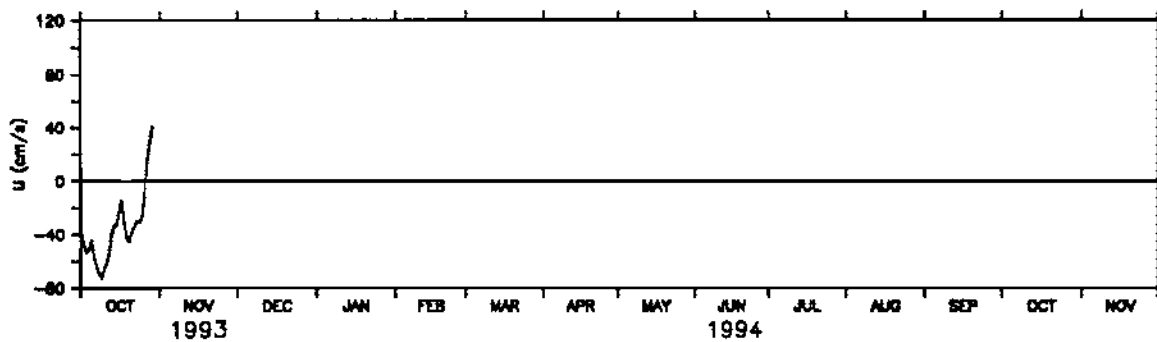
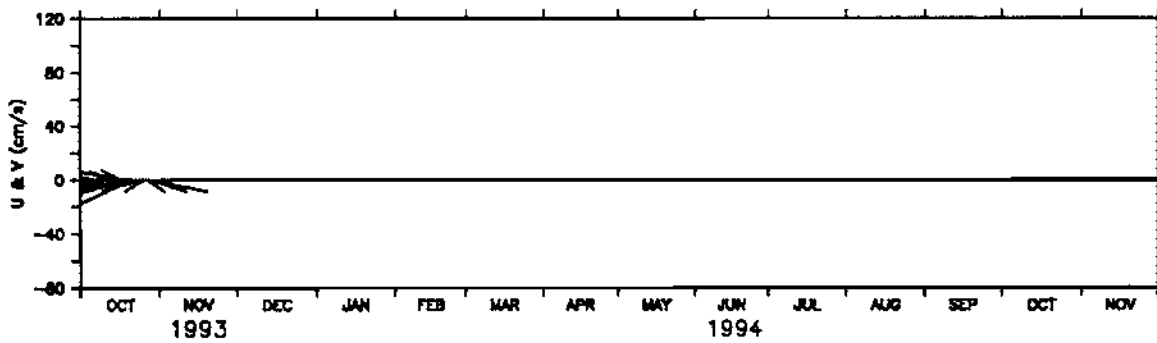
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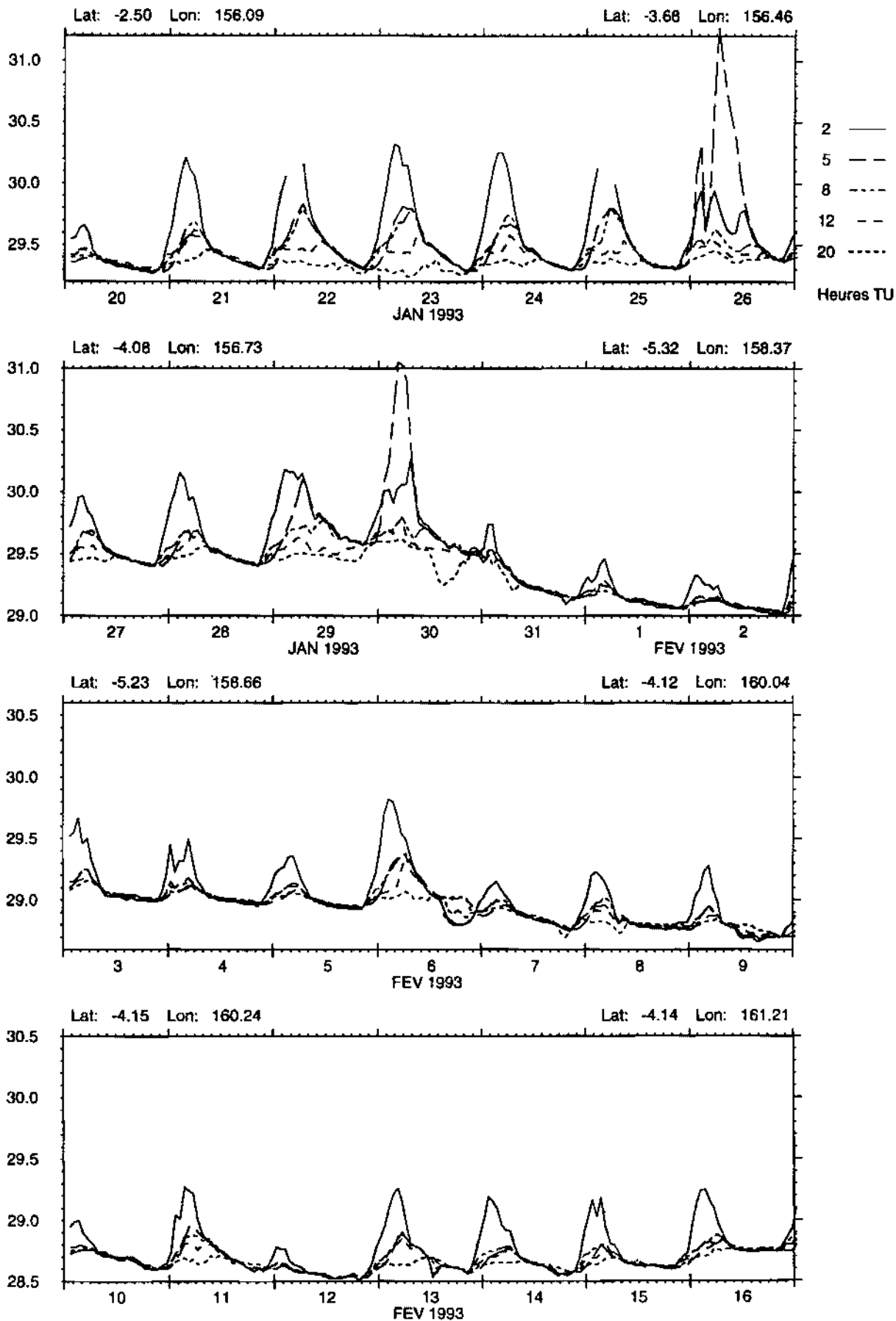
N°17628



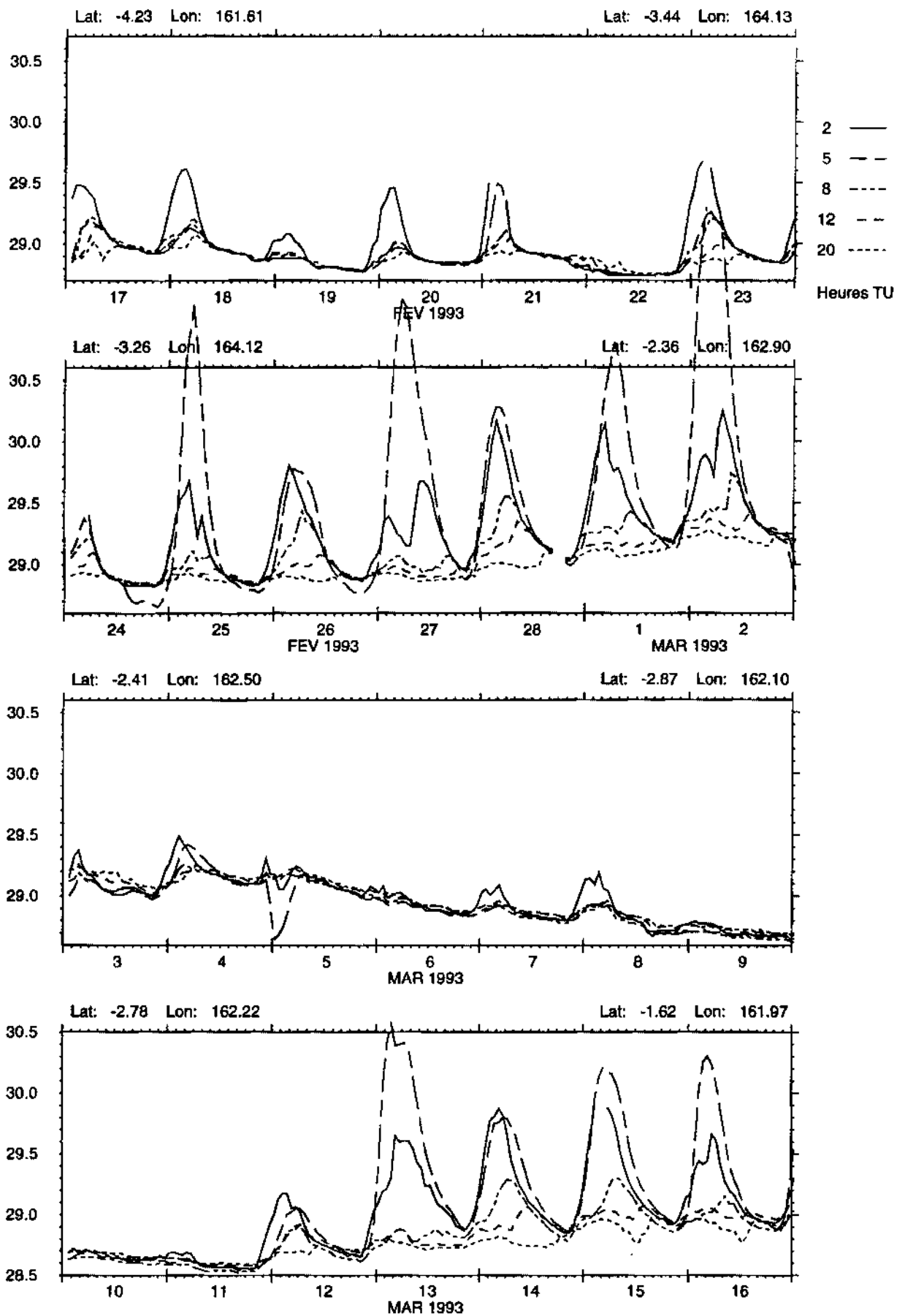
N°17628



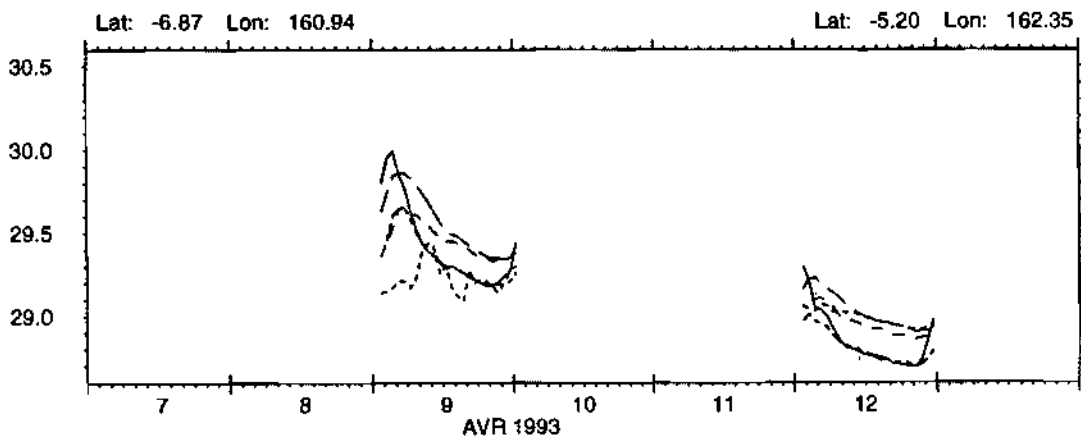
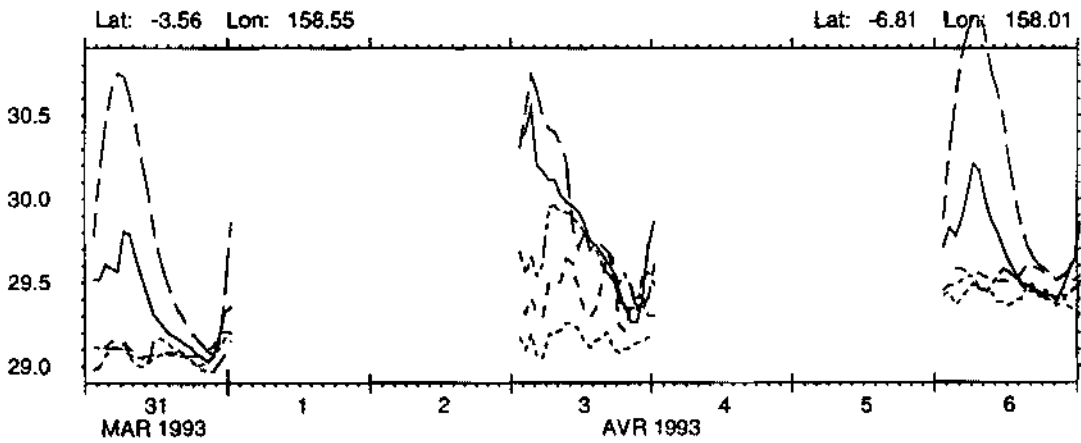
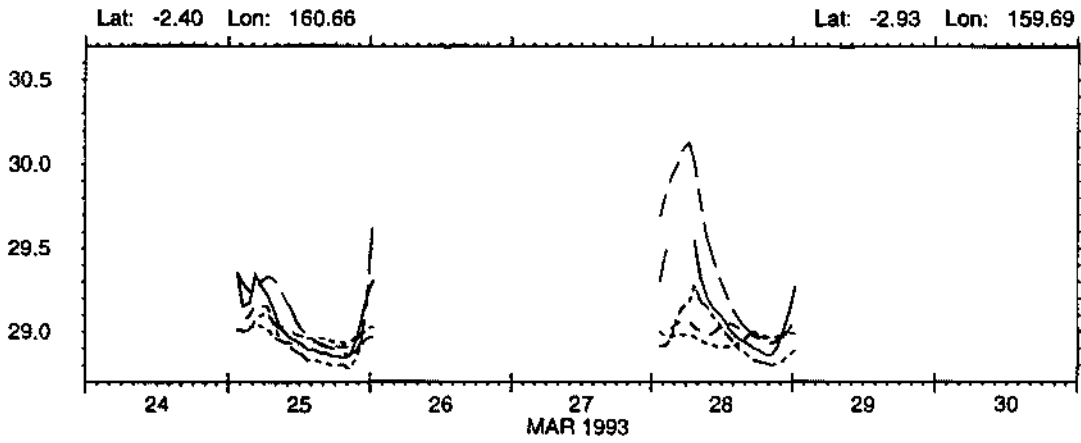
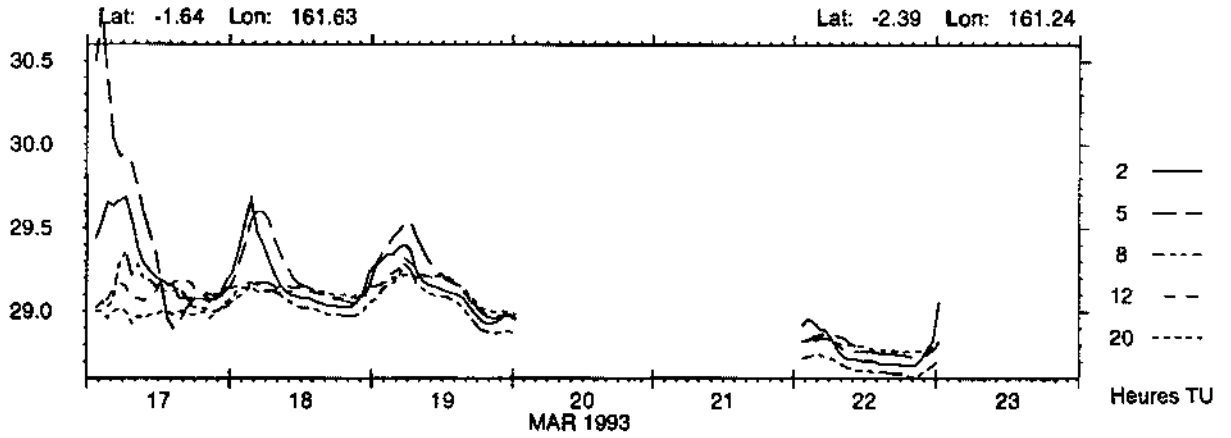
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Bouée dérivante BODEGA n° 17629

Date début et position : 22/12/92 à 0.99°S, 156.30°E

Launch date and position

Date fin et position : 28/06/93 à 1.71°N, 172.15°E

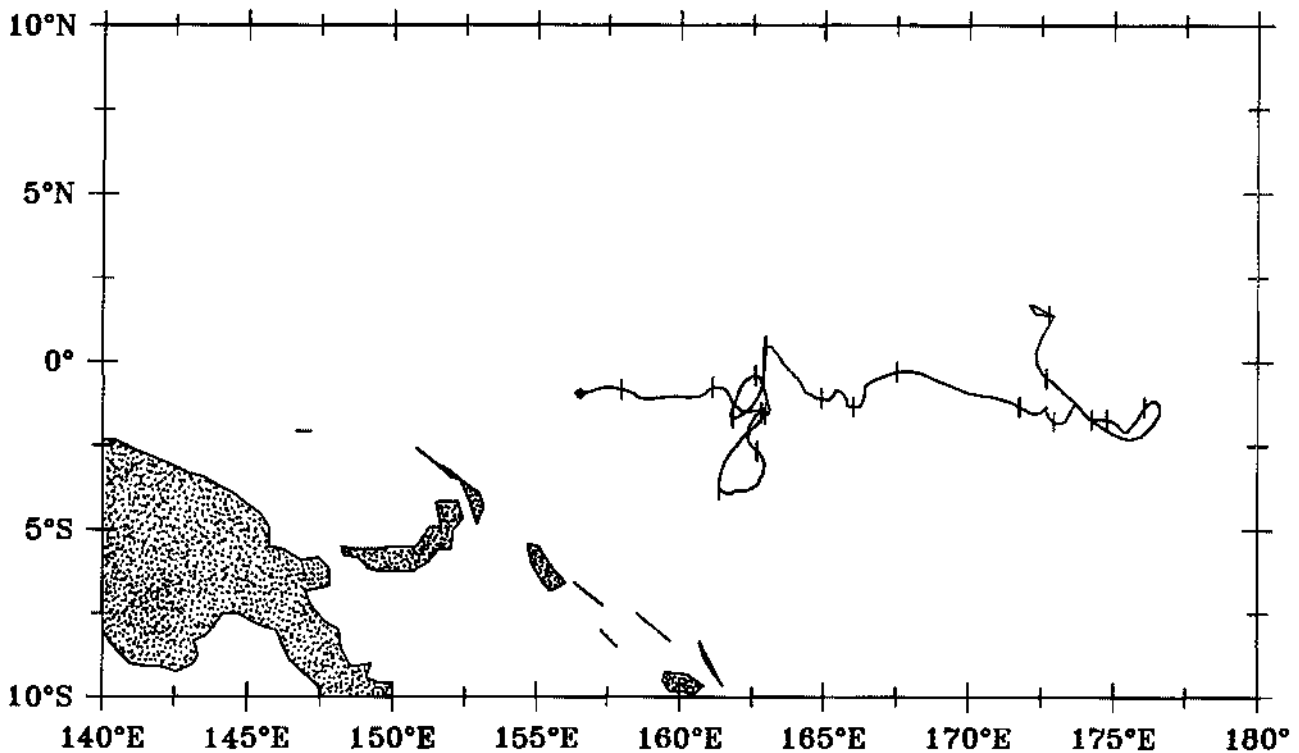
End date and position

Corrections effectuées pour compenser les dérives de capteurs :

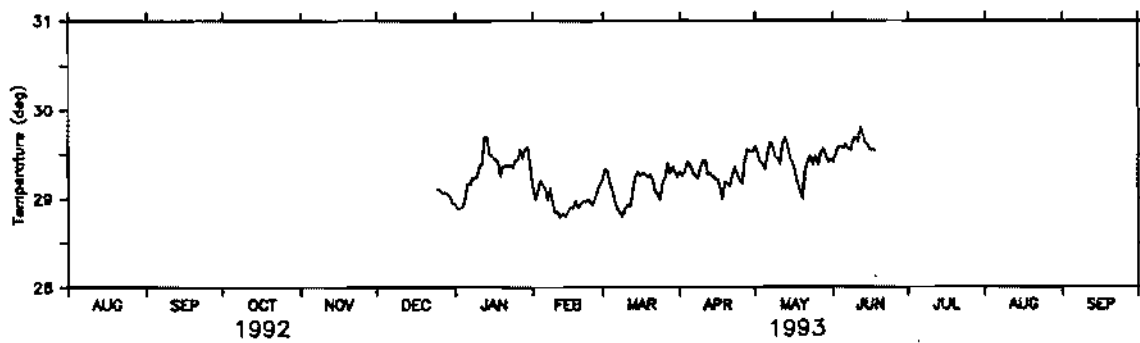
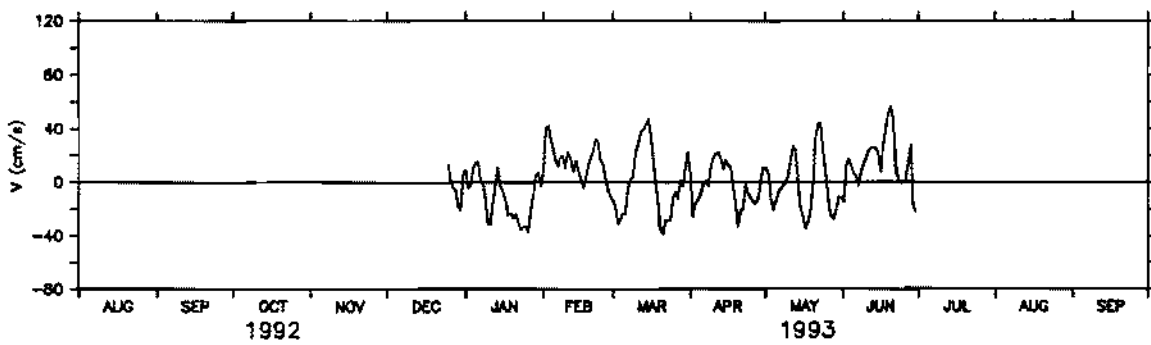
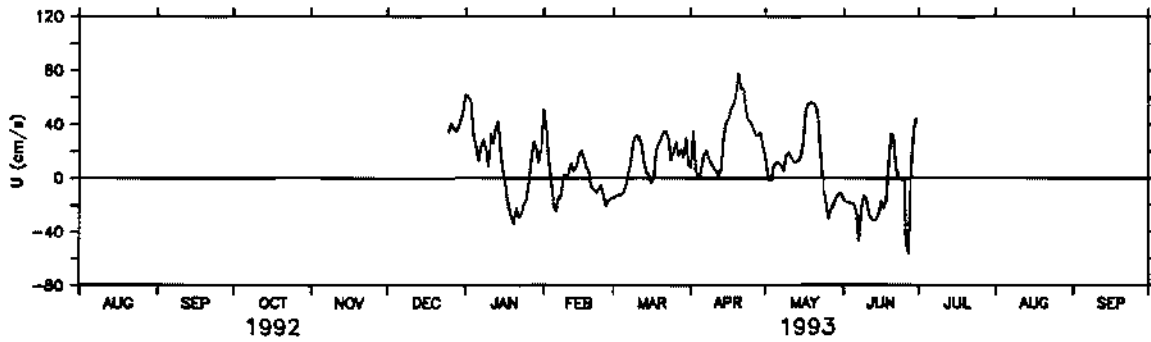
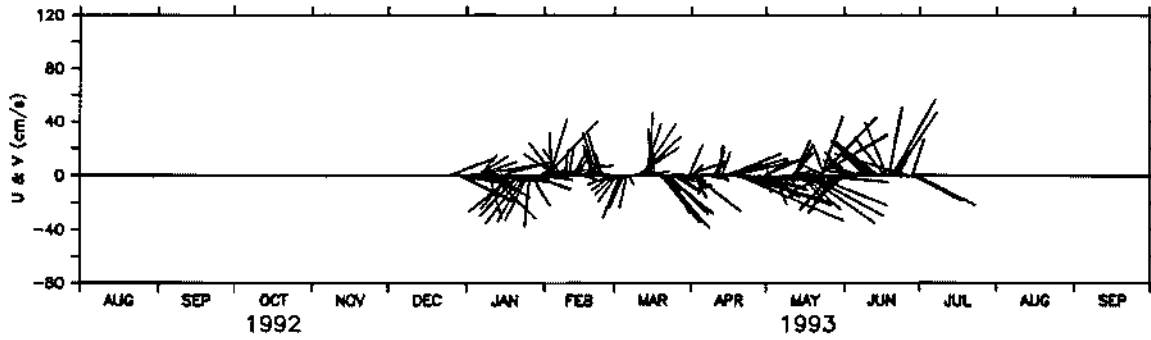
Proposed corrections to compensate sensor drifts

. cycle 79 (17/04/93) :	+0.01 capteur 12m
. cycle 86 (08/05/93) :	+0.04 capteur 12m
. cycle 91 (23/05/93) :	-0.02 capteur 12m
. cycle 92 (26/05/93) :	-0.03 capteur 12m
. cycle 95 (04/06/93) :	-0.05 capteur 12m
. cycle 98 (13/06/93) :	-0.14 capteur 12m
. cycle 99 (16/06/93) :	-0.20 capteur 12m
. cycle 100 (19/06/93) :	-0.27 capteur 12m

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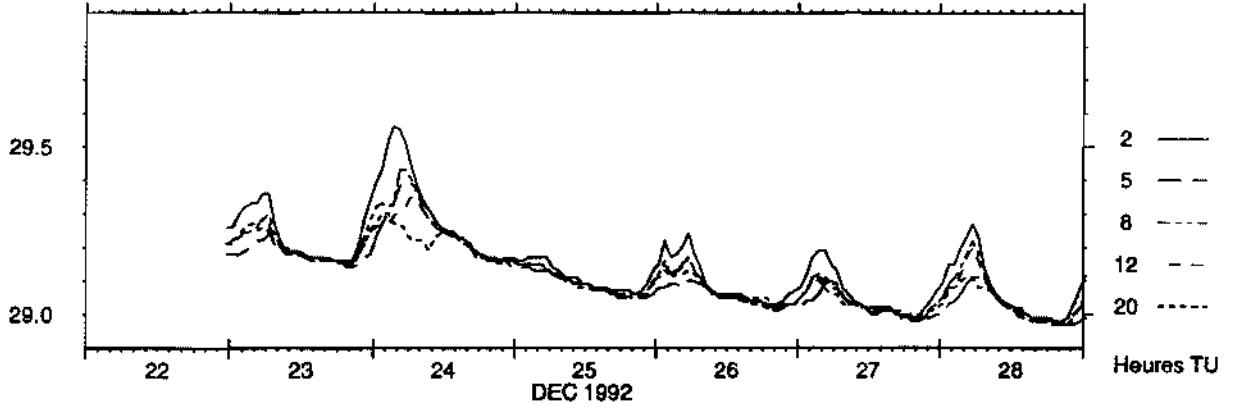


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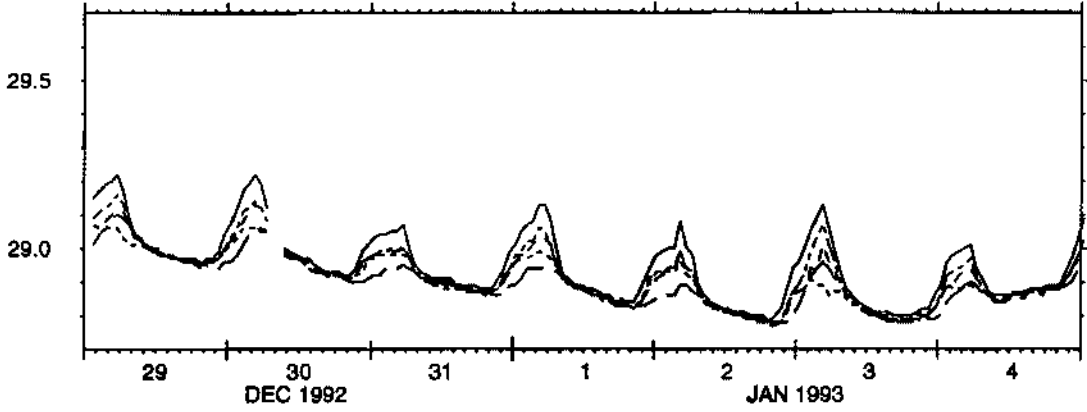
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Lat: -0.83 Lon: 157.95



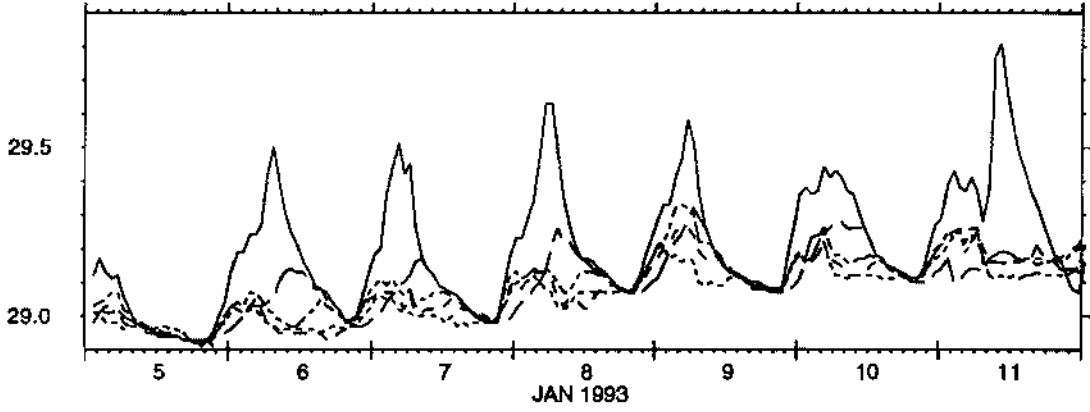
Lat: -0.89 Lon: 158.24

Lat: -1.03 Lon: 160.66



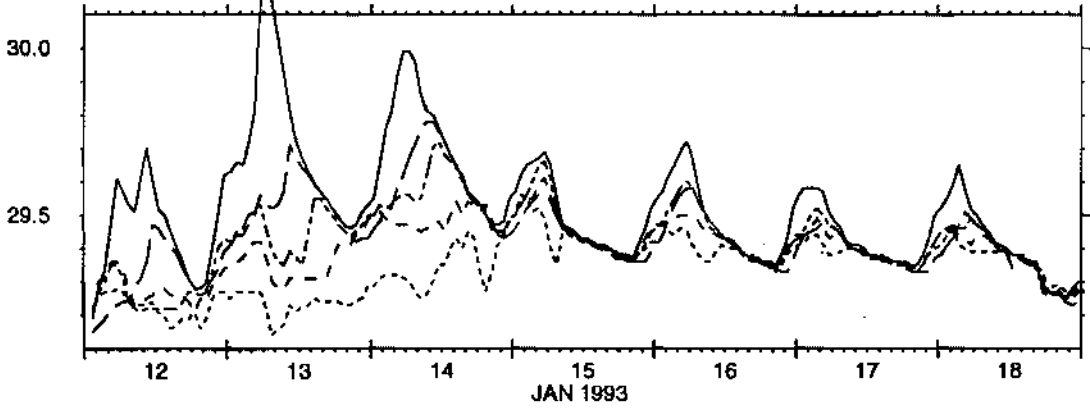
Lat: -0.94 Lon: 160.87

Lat: -1.23 Lon: 161.83

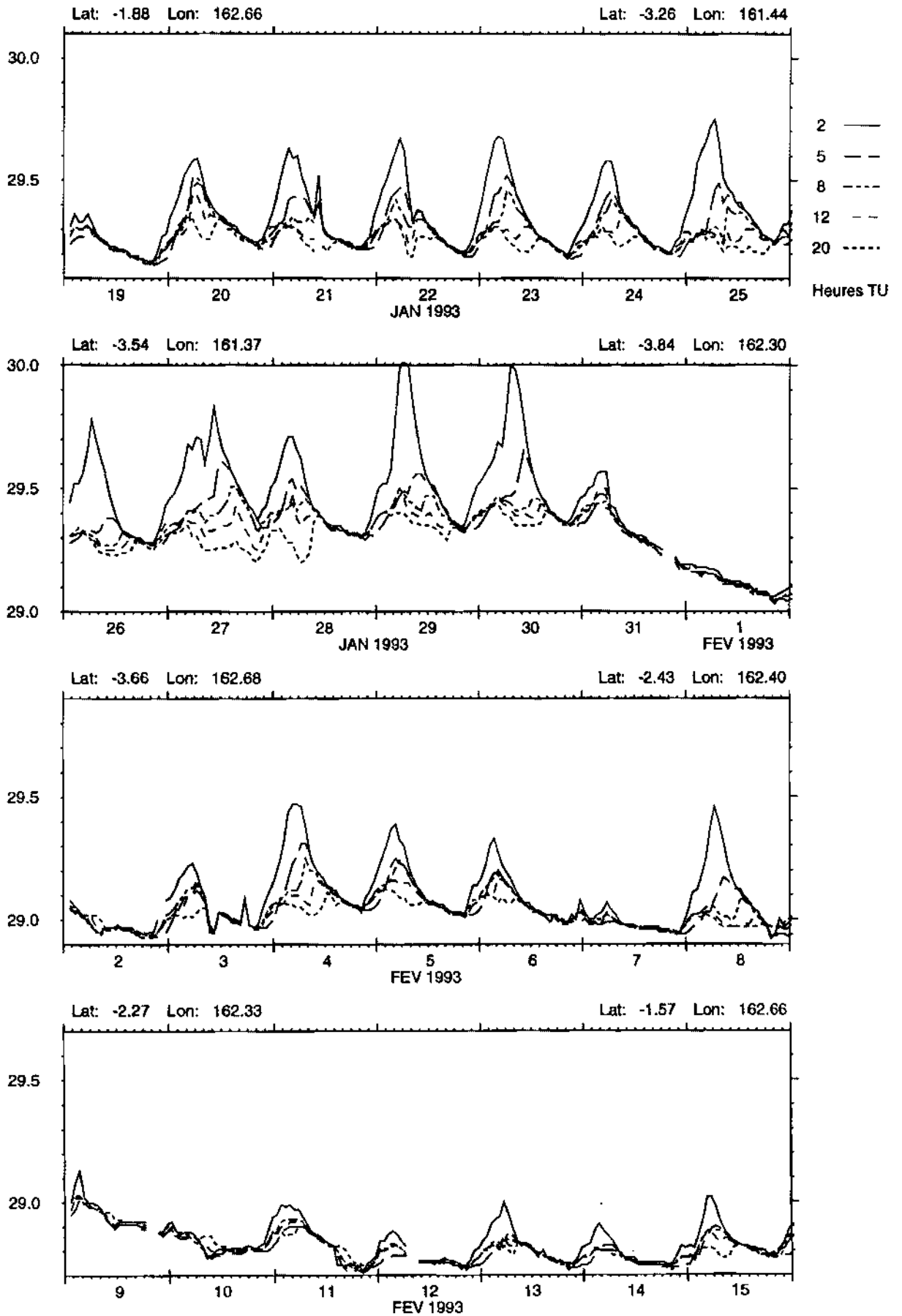


Lat: -1.43 Lon: 162.07

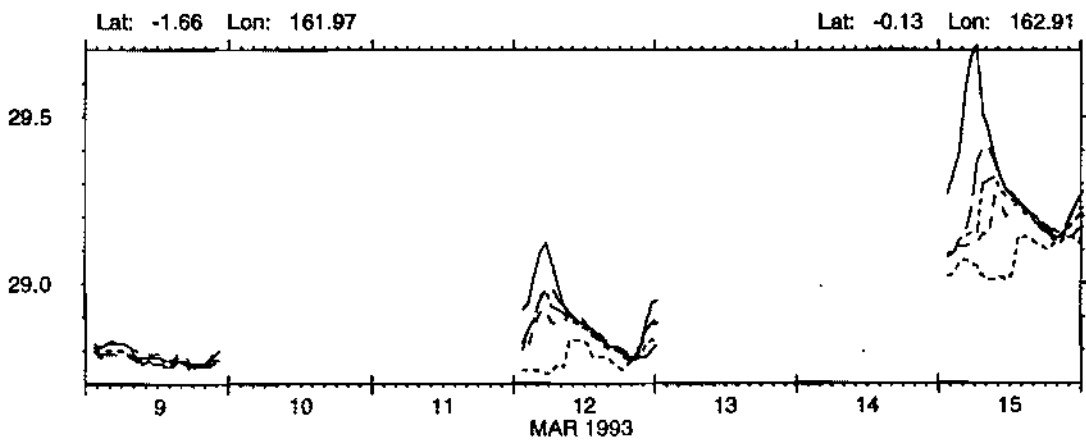
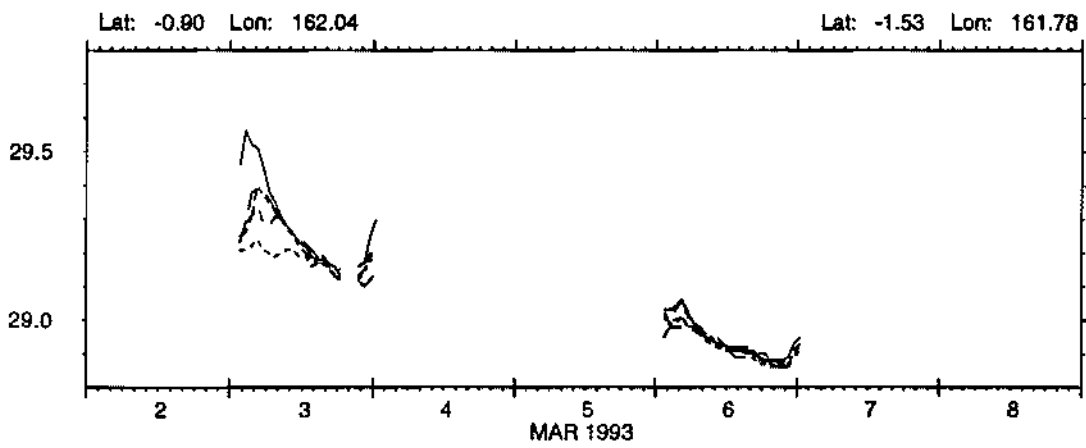
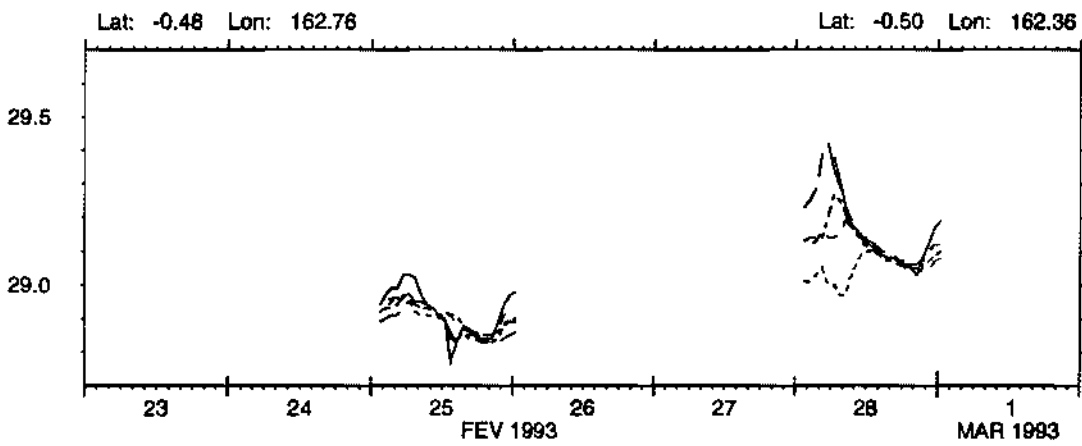
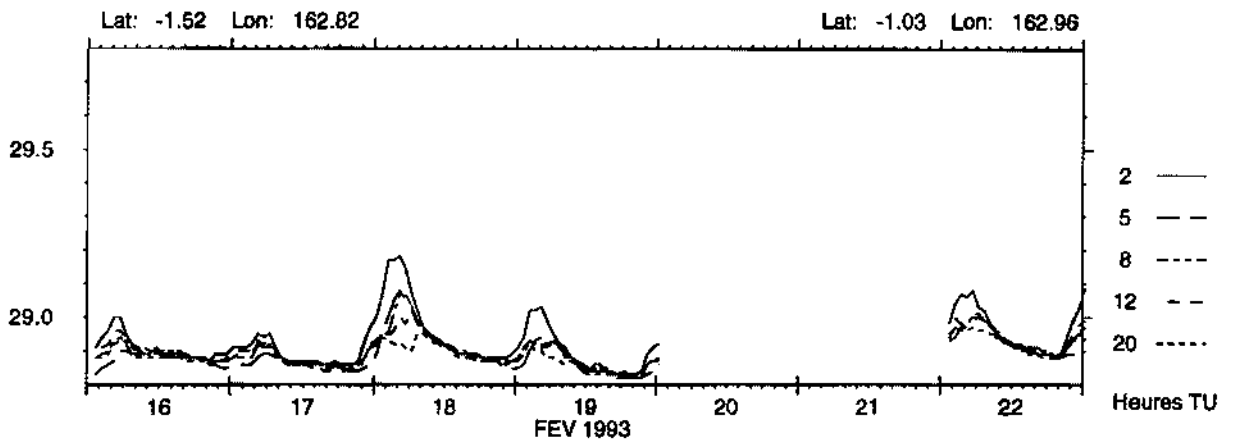
Lat: -1.67 Lon: 162.84



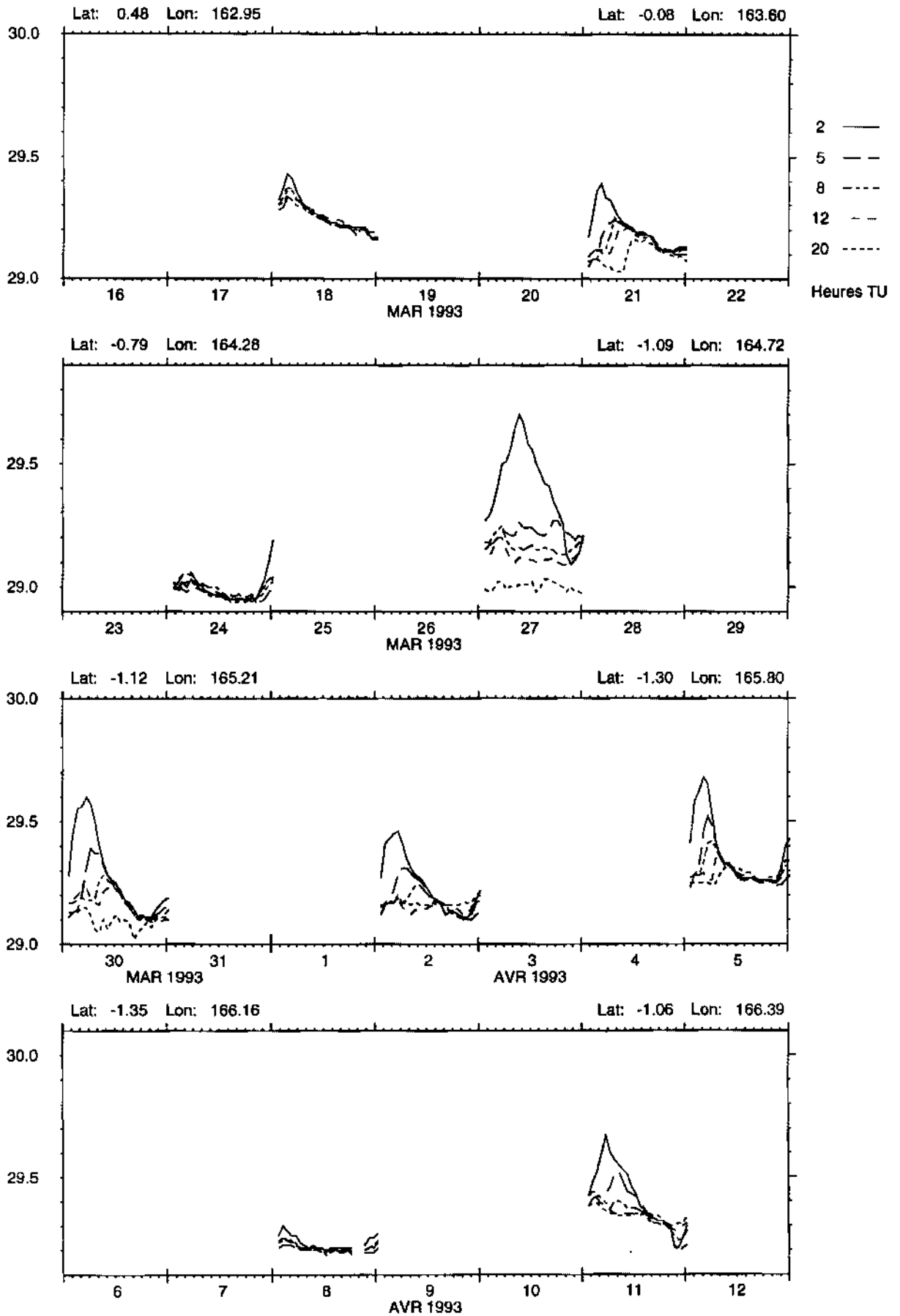
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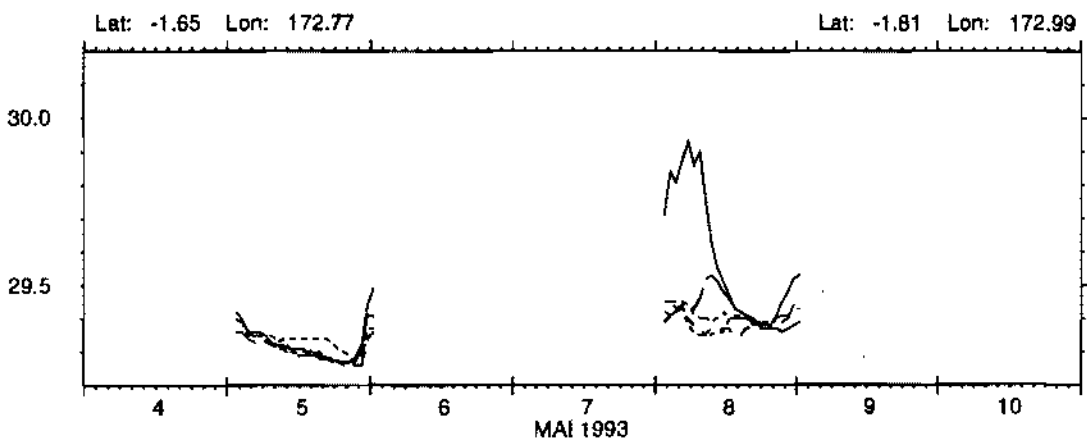
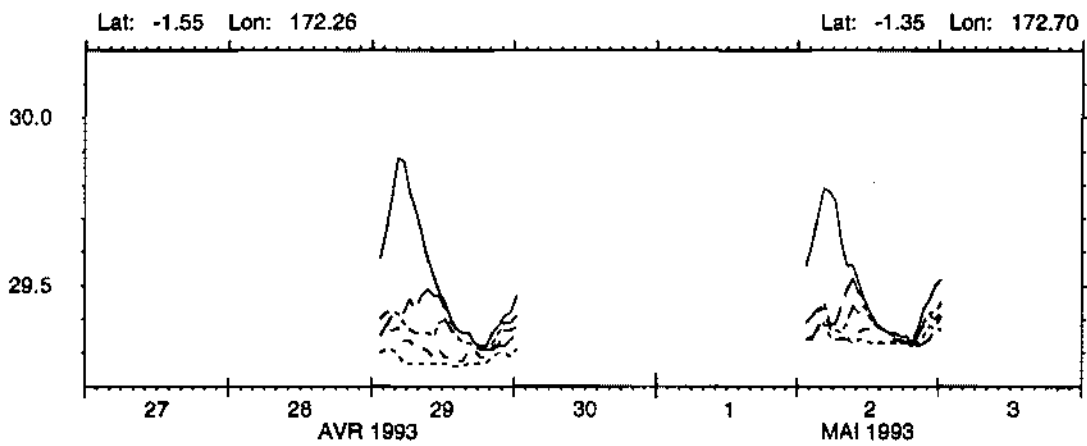
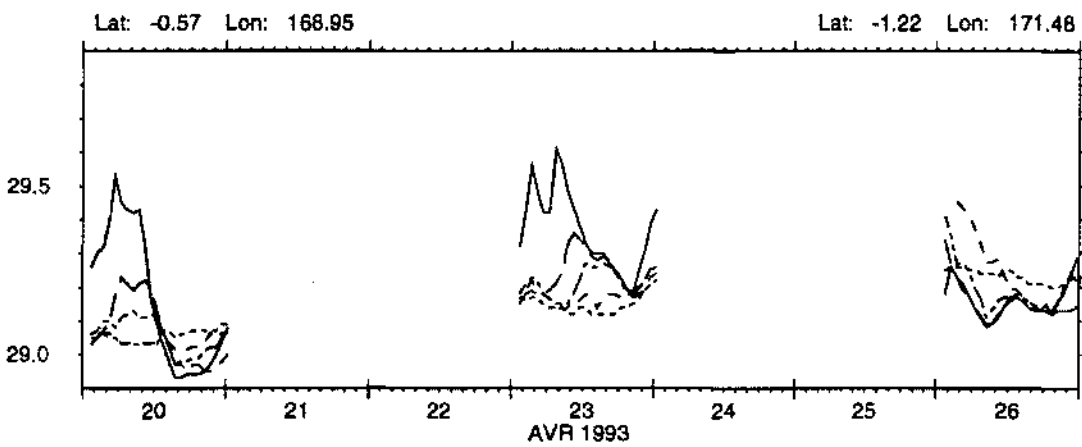
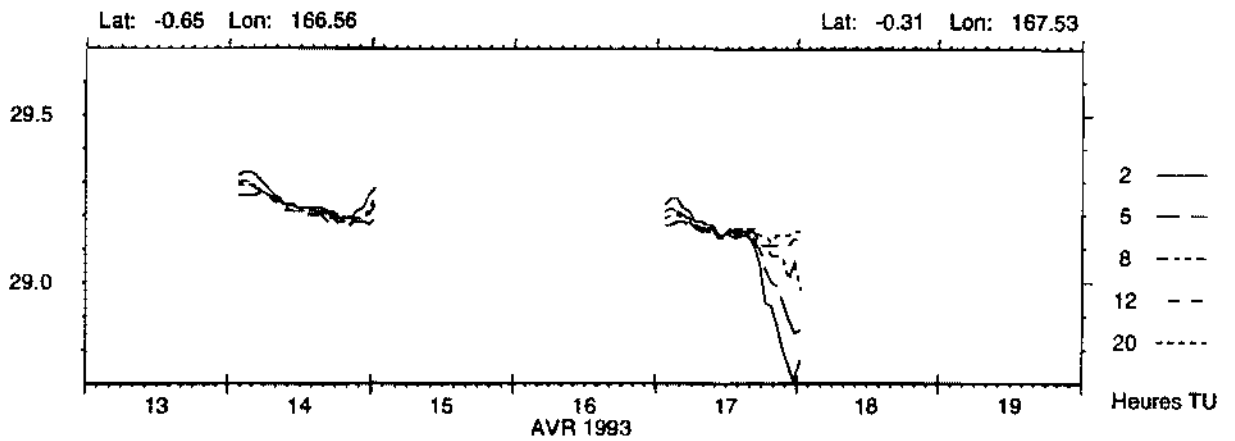
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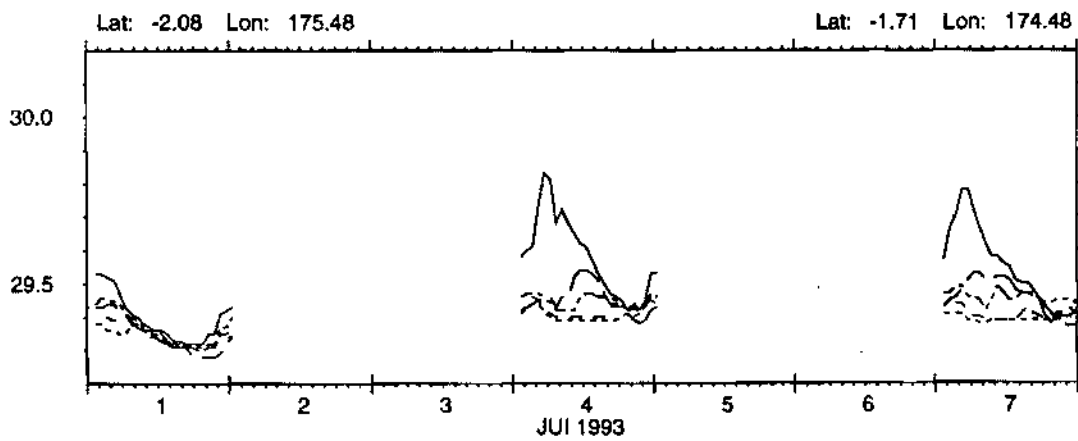
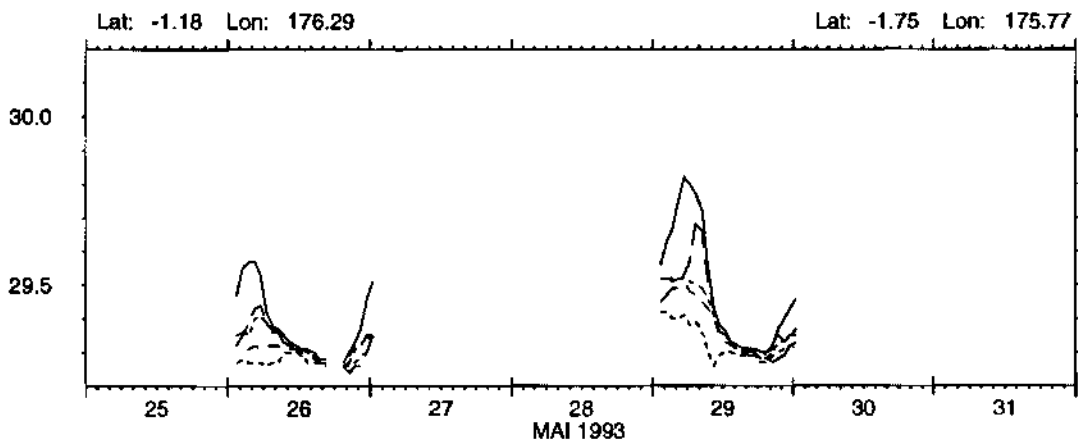
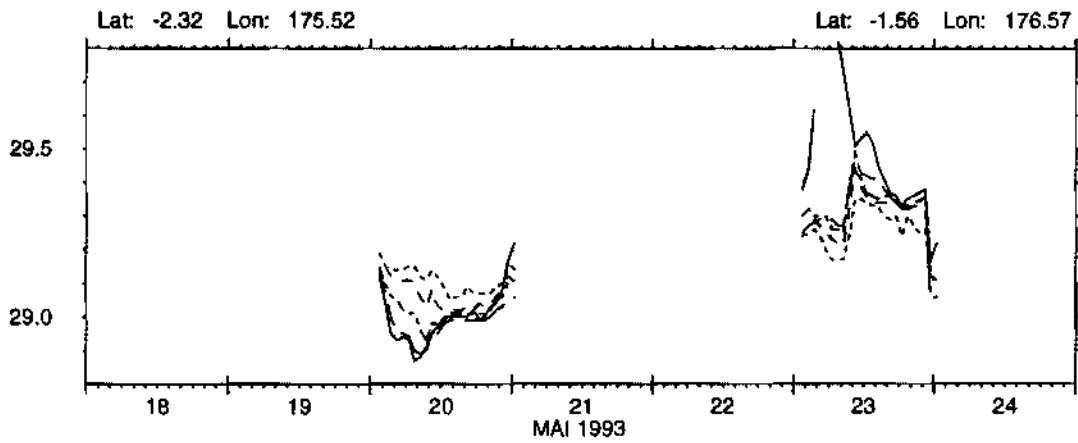
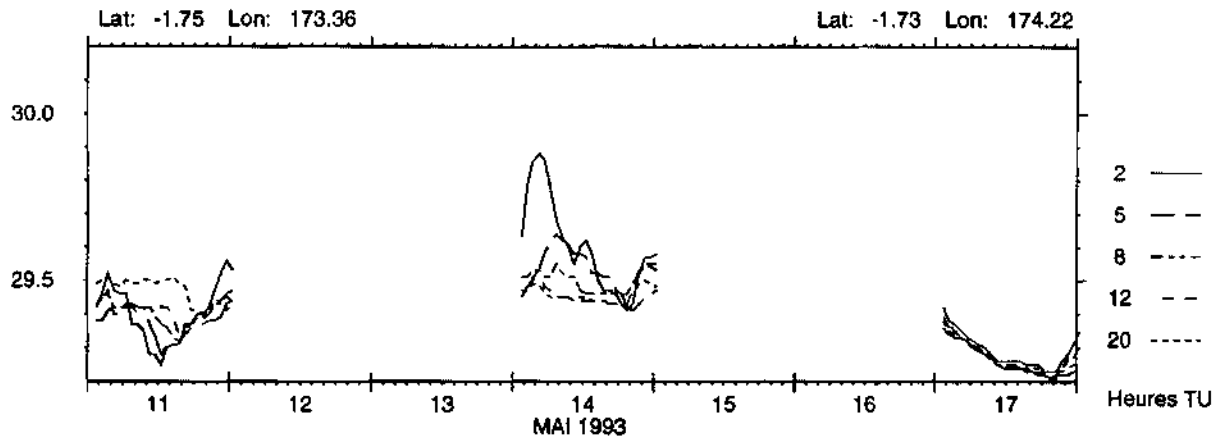
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