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THE FRENCH ATLANTIC LITTORAL

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12. Sponsoring Agency Name and Address	10. Principal Invest. Rept. No 3	
14. Supplementary Notes Prepared in cooperation with J.M. MONGET and R. REGRAIN	11. GSFC Technical Monitor CRUMP Edward W.	
15. Abstract : This third progress report gives initial results on Landsat - 2 data received in the corresponding period. During this period 3 scenes taken, on December 19, 1975, were received and evaluated. The Four CCTS previously ordered have been received and treatment has begun.	13. Key Words (Selected by Principal Investigator) Tidal marsh; littoral; transport; estuary; beaches; wetlands; computer analysis	

**ORIGINAL CONTAINS
COLOR ILLUSTRATIONS**

Original photography may be purchased from
EROS Data Center
10th and Dakota Avenue
Sioux Falls, SD 57198

1 - INTRODUCTION

This report covers the second quarter of 1976 during which number of significant new techniques has been made operational using, LANDSAT-1 data.

Over the same period, LANDSAT-2 data has been received and reformatted to our databank standart (assembly of 4 strips to single scene recording) on direct-access units.

Interpretation, classification and mapping of LANDSAT-2 data has been initiated, singly or in connection with LANDSAT-A data, with emphasis on coastal areas, extending seaward to the extent of coastal sediment transport and landward into saltmarshes, dunes and polders.

2 - TECHNIQUES

2-1 & 4 strip records were copied on disk using 3240 pixel/line format to facilitate data processing, especially in areas bisected by strip borders.

2-2 : Various improvements were carried out on our supervised automatic mapping procedures (using IBM 360 and Benson Offline Plotting System) to save program execution time.

2-3 : Time sharing (Tektronix 4013 output linked to IBM 360) : further development of the FRACAM package have now made this unsupervised interactive classification system fully operational.

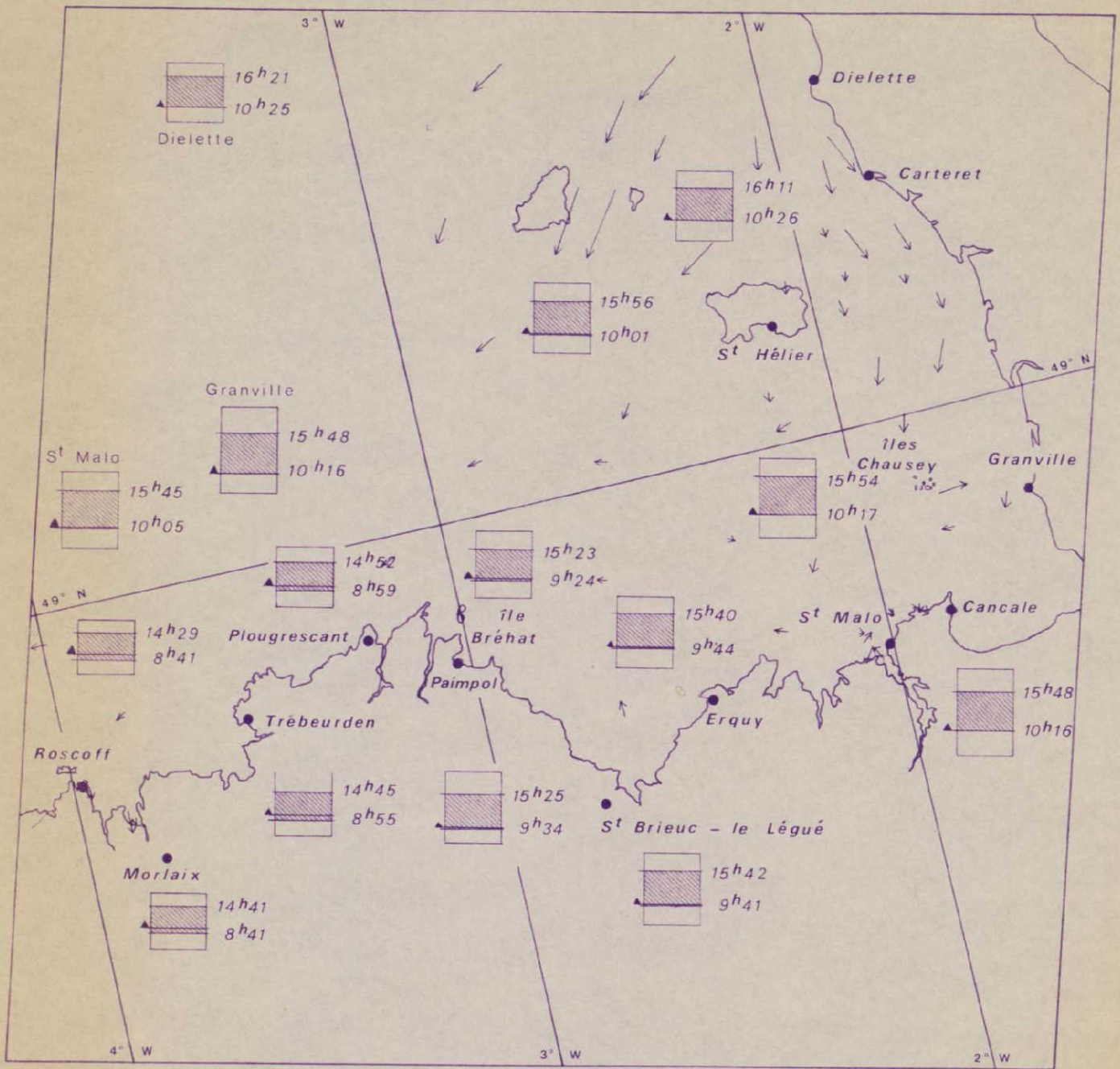
2-4 : A smoothing technique is being tested based on using each pixel in the mapped output from programs (2-2 and 2-3) as the centre of a rectangular or square matrix and replacing this pixel with the modal signature found in the surrounding matrix.

3 - ACCOMPLISHMENTS

3-1 : Ground truth : for LANDSAT-2 data, we have continued to draft maps of coastal areas showing directions of currents and tide heights (following pages). Times given are T.U. (Fig. 3.1.1. to 3.1.3.).

3-2 : Application of automatic cartography of LANDSAT-1 data to the Brouage Marsh test-site (see Fig. 3.2.1.).

Some characteristic areas of the marshes have been isolated and investigated. Remote sensing techniques provide a "neotaxonomy" which is usually different and complementary to the customary visual taxonomy.



Tidal currents (1 cm = 1 m/s)

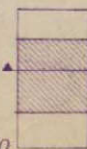
Tidal range and water level (1 mm = 1 m)

June 6, 1975

→ S H O M

Maximum high water springs

▼ falling tide
▲ rising tide

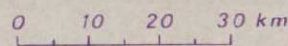
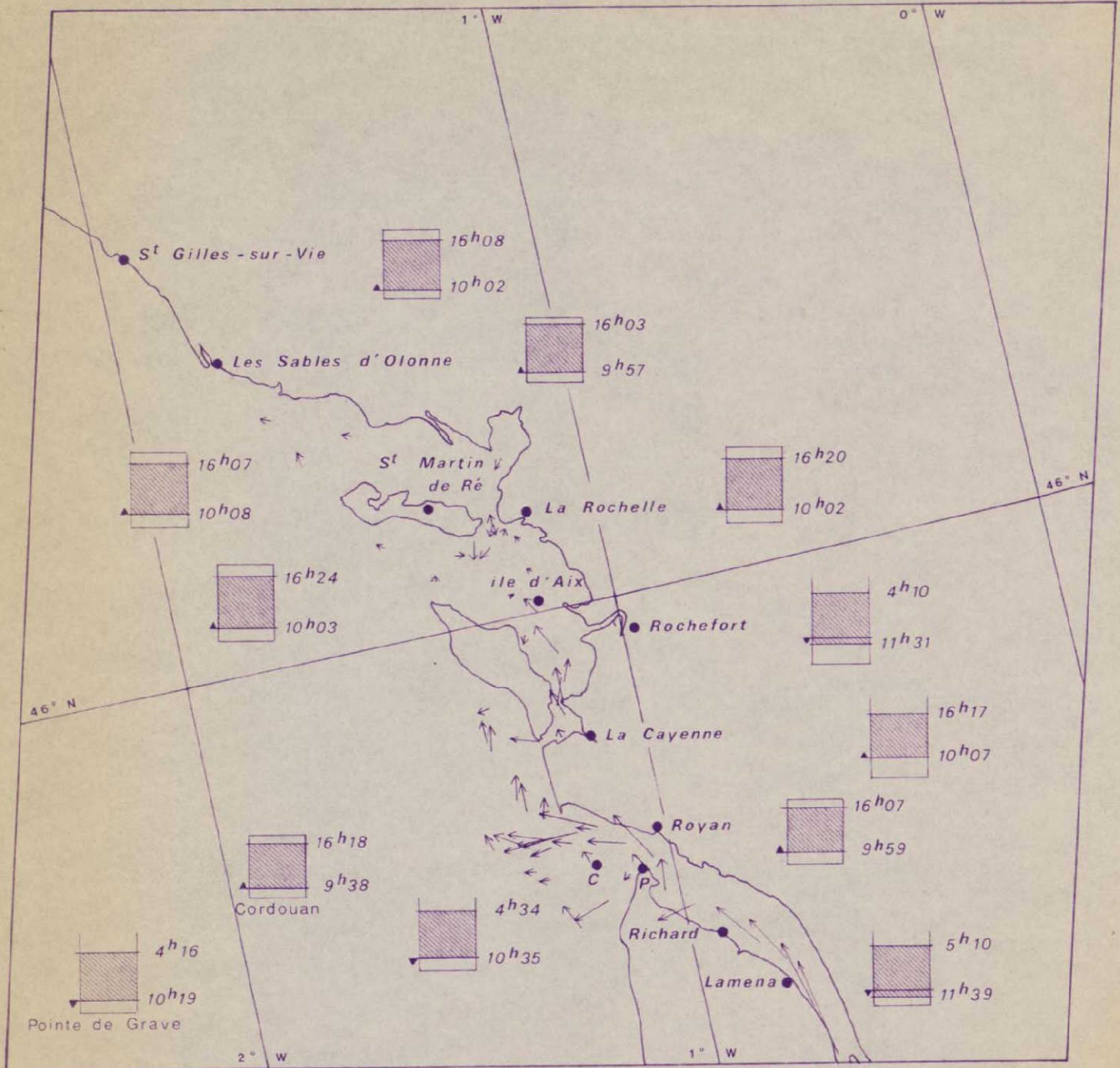


High water
Tide level 10^h23 TU
Low water

Chart datum 0

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Fig. 3.1.1. : Hydrological ground-truth data.

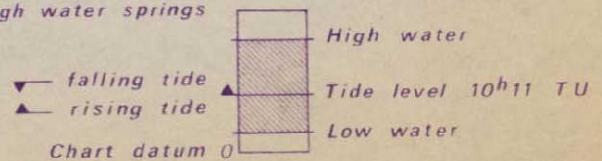


Tidal currents (1 cm = 1 m/s)

Tidal range and water level (2 mm = 1 m)

December 19, 1975

Maximum high water springs



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→ S H O M

Fig. 3.1.3. : Hydrological ground-truth data.

4 - LIST OF PUBLICATIONS

- CAZABAT (Ch), 1975
"Topologie ertsienne de la France (Premiers résultats).
Bull. Soc. fr. Photogrammétrise, n° 60, p.21-36, 6 pl.
- DAVID (D.J.), JOLY (G), VERGER (F), 1976
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Data" in "Advances in Earth Observation (Space) Techniques" -
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satellites " - Colloque AFCET - Panorama de la Nouveauté
Informatique en France - Gif-sur-Yvette - Novembre 1976
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Programs" - Alpbach Summer School - 24 p.
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Sensing" - COSPAR - Paper VI - 10 - Philadelphia.
- VERGER (F), 1976
"Les données LANDSAT et un exemple de leur utilisation" -
Travaux et Documents de Géographie Tropicale, n° 25 : Télédé-
tection et environnement tropical - CNRS - p. 11 - 24 - Mai
1976.
- VERGER (F), 1976
"L'apport des satellites LANDSAT à la connaissance du litto-
ral français" - L'Ingénieur Constructeur".

5 - DATA QUALITY AND DELIVERY

Since the last report, 3 frames of B/W, 70 mm imagery have been received. Despite certain delays we find that data has been reaching us more regularly (2 to 3 months after coverage).

The four CCTS ordered during the last quarter of 1975 have been received and their interpretation has begun.

DATE	PRODUCT ID	BLACK AND WHITE PRODUCTS				CLOUD COVER (%)	TAPE PRO-DUCT O=order received	ORBIT NUM-BER	CODE OF FRAMES (L = Littoral)
		MSS (Quality)							
		4	5	6	7				
10 April 75	E2 078-10055	F	P	F	F	30		1083	FLANDRES (L)
"	E2 078-10062	F	F	F	F	40		"	PICARDIE (L)
"	E2 078-10064	F	G	G	G	70		"	BEAUCE
"	E2 078-10071	G	G	G	G	60		"	ANJOU
"	E2 078-10073	G	G	G	G	60		"	CHARENTE-GIRONDE
"	E2 078-10080	G	G	G	F	50		"	LANDES (L)
"	E2 078-10082	G	G	F	G	60		"	GOLFE GASCOGNE (L)
3 June 75	E2 132-10070	P	P	P	P	80		1836	ANJOU-VENDEE
"	E2 132-10073	G	G	G	G	60		"	GIRONDE
"	E2 132-10075	F	G	G	F	70		"	LANDES (L)
"	E2 132-10082	F	G	G	G	60		"	PYRENEES
4 June 75	E2 133-10113	G	P	F	G	40		1850	ARTOIS (L)
"	E2 133-10120	F	F	F	G	30		"	BAIE DE SEINE (L)
"	E2 133-10122	G	P	G	G	60		"	BAIE DE SEINE (L)
"	E2 133-10125	G	F	G	G	50		"	VENDEE (L)
"	E2 133-10131	G	F	F	G	50	⊕	"	GIRONDE (L)
"	E2 133-10134	F	P	G	G	40	⊕	"	LANDES (L)
6 June 75	E2 135-10233	F	P	P	F	20		1878	JERSEY-COTENTIN (L)
"	E2 135-10235	F	F	G	F	30	⊕	"	BAIE ST MICHEL (L)
"	E2 135-10242	F	F	G	F	60		"	MORBIHAN (L)
8 June 75	E2 137-10352	F	G	G	G	50		1906	OUESSANT (L)
21 June 75	E2 150-10060	F	F	F	F	40		2087	FLANDRES (L)
"	E2 150-10071	F	F	G	G	50		"	TOURAIN
"	E2 150-10074	G	G	G	G	30	⊕	"	GIRONDE (L)
"	E2 150-10080	F	F	G	G	10		"	ARCACHON (L)
"	E2 150-10083	G	G	G	G	10		"	GOLFE DE GASCOGNE (L)
22 June 75	E2 151-10135	F	F	F	G	20		2101	ARCACHON (L)
26 June 75	E2 155-10353	F	F	F	F	40		2157	MER CELTE (L)
9 July 75	E2 168-10073	G	G	G	G	50		2338	SAINFONGE
"	E2 168-10080	G	G	G	G	50		"	ARCACHON (L)
"	E2 168-10082	F	G	G	G	40		"	GOLFE DE GASCOGNE(L)
14 July 75	E2 173-10352	G	F	G	G	30		2408	OUESSANT (L)
27 July 75	E2 186-10071	G	G	G	G	0		2589	CHARENTE
"	E2 186-10073	G	F	G	G	10		"	ARCACHON (L)
"	E2 186-10080	G	G	G	G	40		"	COTE D'ARGENT (L)
28 July 75	E2 187-10111	F	P	G	X	30		2603	PAS-DE-CALAIS (L)
"	E2 187-10114	F	F	G	G	30		"	PICARDIE (L)
"	E2 187-10120	G	F	G	G	50		"	BAIE DE SEINE (L)
"	E2 187-10123	G	F	G	G	20		"	ANJOU
"	E2 187-10125	G	G	G	G	20		"	CHARENTE (L)
"	E2 187-10132	G	G	F	G	10		"	ARCACHON (L)
"	E2 187-10134	F	G	G	F	10		"	GOLFE DE GASCOGNE (L)
29 July 75	E2 188-10172	F	F	F	F	10		2617	MANCHE/BAIE DE SEINE (L)
"	E2 188-10181	F	F	F	F	10	⊕	"	ESTUAIRE LOIRE (L)
"	E2 188-10183	F	F	F	F	0	⊕	"	VENDEE-CHARENTE (L)
"	E2 188-10190	F	F	F	G	0		"	LARGE DES LANDES
30 July 75	E2 189-10230	F	F	F	F	10		2631	N COTENTIN (L)
"	E2 189-10233	F	F	F	G	10	⊕	"	GOLFE ST MALO (L)
"	E2 189-10235	F	F	F	G	10		"	MORBIHAN (L)
"	E2 189-10242	F	F	F	F	10		"	GOLFE DE GASCOGNE
4 Sept. 75	E2 225-10222	G	G	F	G	50		3133	ANGLETERRE/COTENTIN (L)
20 Sept. 75	E2 241-10120	F	G	G	G	50		3356	CHARENTE/GIRONDE (L)
"	E2 241-10123	F	F	G	G	40		"	ARCACHON/LANDES (L)
"	E2 241-10125	F	F	F	F	30		"	ST JEAN DE LUZ (L)

DATE	PRODUCT ID	BLACK AND WHITE PRODUCTS				CLOUD COVER (%)	TAPE PRODUCT	ORBIT NUMBER	CODE OF FRAMES (L = Littoral)
		MSS (Quality)							
		4	5	6	7				
8 oct. 75	E2 259-10110	F	F	G	G	20		3607	BAIE DE SEINE (L)
"	E2 259-10113	-	G	G	F	50		"	ANJOU
25 oct. 75	E2 276-10060	F	F	F	F	50		3844	DOROGNE
28 oct. 75	E2 279-10215	F	F	F	F	30		3886	COTENTIN NORD (L)
"	E2 279-10222	F	F	F	F	10	⊕	"	G. NORMAND-BRETON (L)
"	E2 279-10224	F	F	F	G	10	⊕	"	BRETAGNE SUD (L)
19 déc. 75	E2 331-10104	G	G	G	G	10		4611	TOURAINNE
"	E2 331-10110	G	G	G	G	10		"	CHARENTE
"	E2 331-10113	G	G	G	G	30		"	ARCACHON
20 déc. 75	E2 332-10165	F	G	F	F	10		4625	OLONNE (L)
"	E2 332-10171	F	G	F	F	20			LANDES (L)

