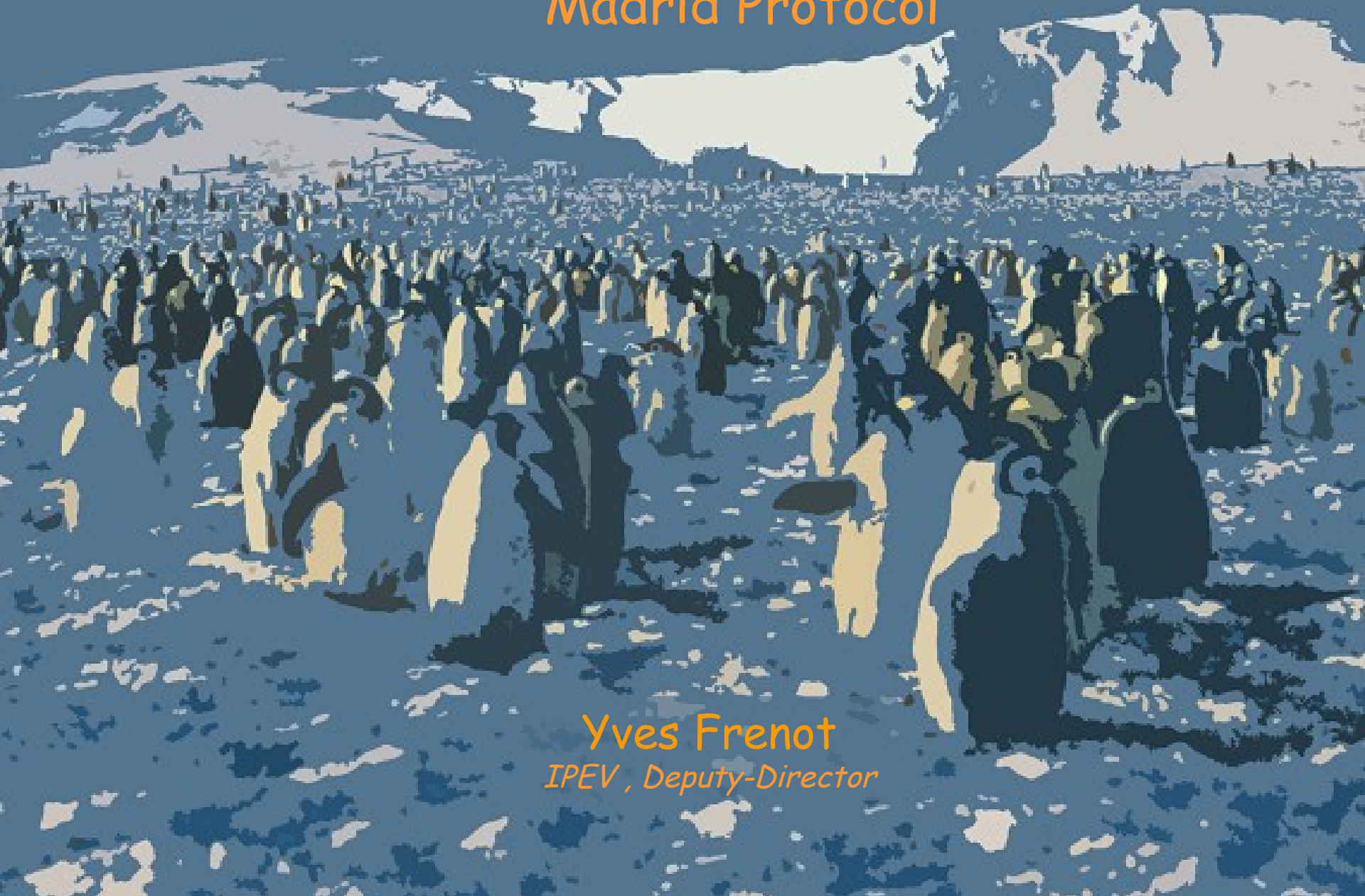
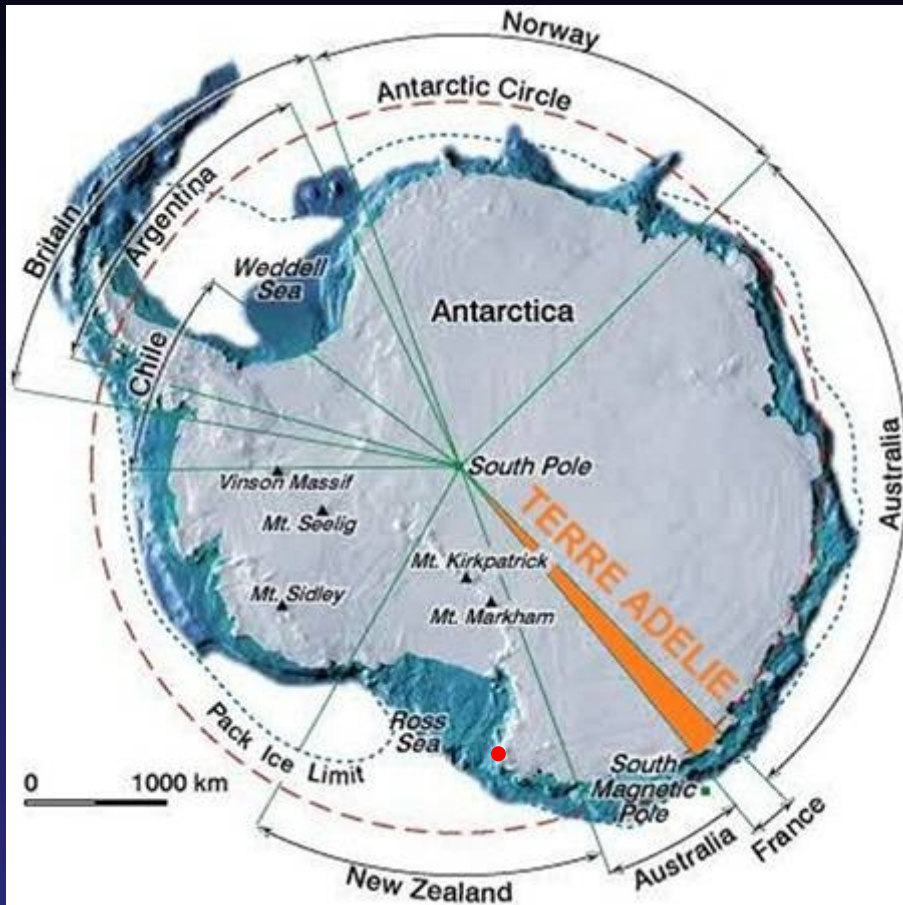


Concordiasi and the requirements of the Madrid Protocol



Yves Frenot
IPEV , Deputy-Director

Resources of the Antarctic



- Seals
- Whales
- Marine resources: fish krill..
- Mineral resources
- Gaz, petrol
- Tourism



Territorial claims :

UK
Chile
Argentina
Norway
New-Zealand
Australia
France

International Geophysics Year (1957-1958)



- 7 claimant States
- 60 other States
- 4000 scientific organisations
- 25000 scientists & technicians

Best conditions to make
Antarctica a continent
dedicated to Science



Station Charcot
Terre Adélie

Signature of the Antarctic Treaty

December 1st 1959, Washington



In 2008
47 Parties

Pays	Pays possessionnés	Signataires originaux
Argentine	x	x
Australie	x	x
Chile	x	x
France	x	x
Nouvelle Zélande	x	x
Norvège	x	x
Royaume Uni	x	x
Belgique		x
Japon		x
Fédération de Russie		x
Afrique du Sud		x
Etats-Unis d'Amérique		x

Entry into force on June 23th, 1961 for 30 yrs

Territorial claims: *statu quo*

no acts or activities shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty or create any rights of sovereignty in Antarctica.

No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted



A continent dedicated to Peace

prohibits "any measures of a military nature" but does "not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose"



prohibits "any nuclear explosions in Antarctica and the disposal there of radioactive waste material"



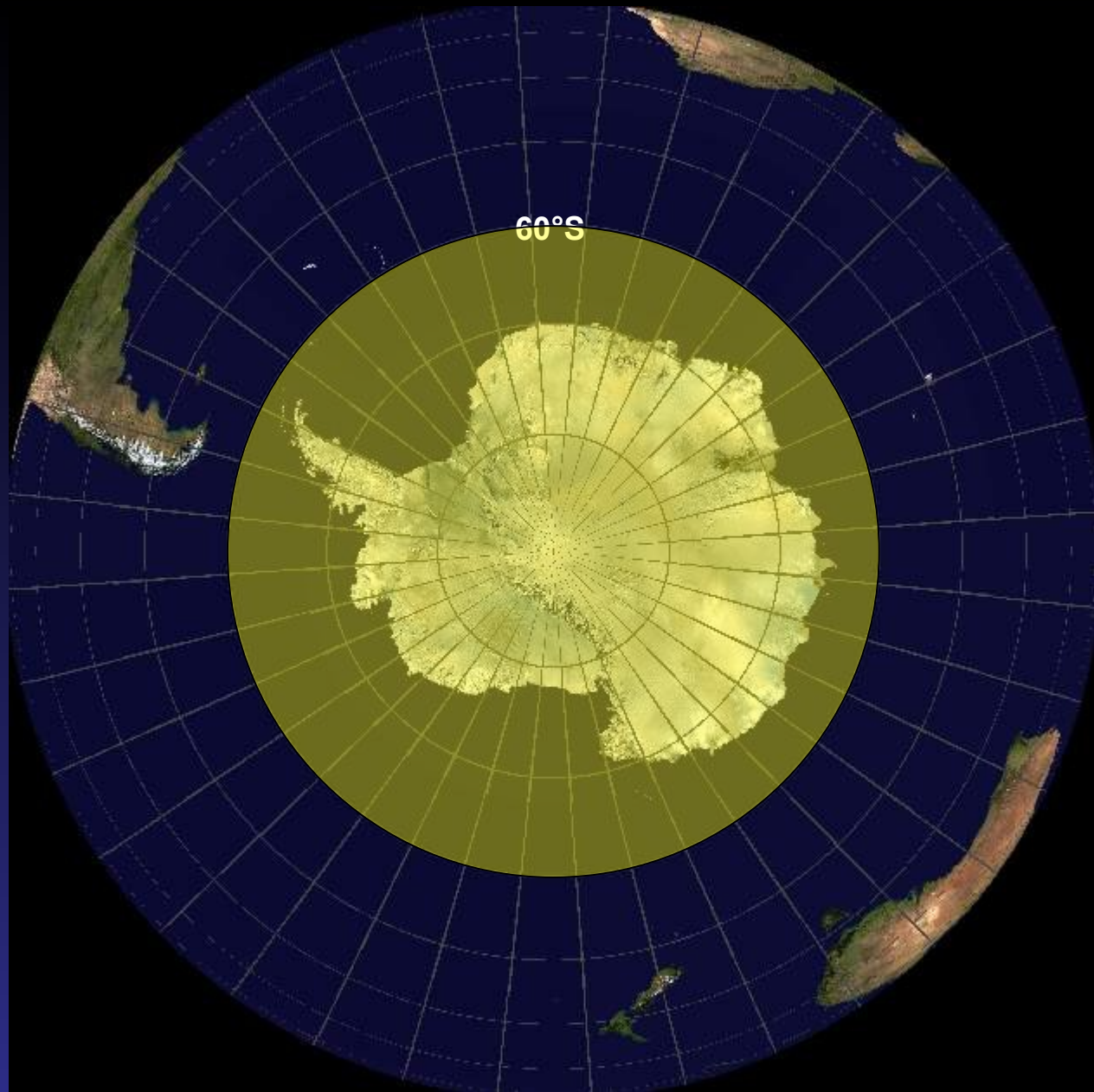
Freedom of scientific investigation in Antarctica Station settlement



International cooperation
in scientific investigation:

- information exchange,
- personnel exchange,
- scientific observations
and results exchange.





Protocol on Environmental Protection to the Antarctic Treaty Madrid, 4 October 1991

designates Antarctica as a natural
reserve, devoted to peace and science
(Article 2)



Six annexes

- **Annex I** - initial environmental evaluation
- **Annex II** - conservation of antarctic fauna and flora
- **Annex III** - waste disposal and waste management
- **Annex IV** - prevention of marine pollution
- **Annex V** - area protection and management
- **Annex VI** - liability



Annex I : initial environmental evaluation

Description of the activity

Impact less than minor or transitory ?



Declaration



Initial Environmental Evaluation (IEE)

Impact minor or transitory ?



Authorization



Comprehensive Environmental Evaluation (CEE)

Impact more than minor or transitory

- Public (nationally and internationally)
- Evaluation by CEP and ATCM



Authorization



Initial Environmental Evaluation *CONCORDIASI*



with the contribution of P. Penhale, Environmental Officer at NSF/OPP

McMurdo, Antarctica
Late August to late October 2009

Concordiasi
Toulouse
10 décembre 2008

July 15, 2008

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Lesson learnt from Vorcore experiment

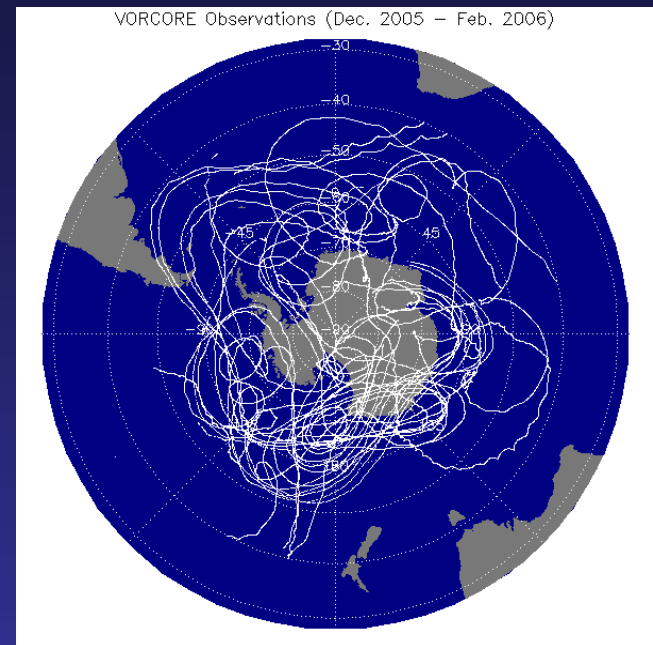
■ Launch site:

- ◆ Flattened area,
- ◆ 2 Jamesways with power, and some heating
- ◆ Helium gas racks,

■ Offices and regular lab space



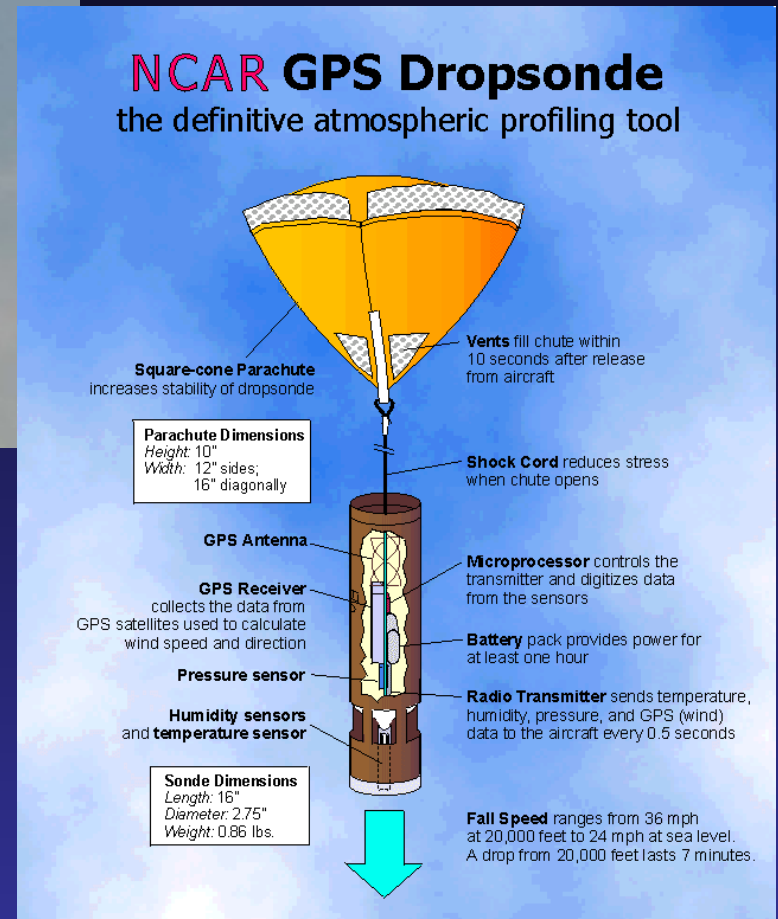
Lesson learnt from Vorcore experiment



Specificities of Concordiasi



Driftsonde gondola



Items produced at launch site

	Items				
	Gas emissions	Waste	Noise	Fuel spills	Mechanical action
Vehicles	X	-	X	(x)	X
Electrical generation	X	-	X	(x)	-
Construction/dismantling of infrastructures	-	(x)	X	(x)	X
Fuel storage	-	-	-	(x)	-

X definite item; (x) possible item but avoidable if certain precautions are taken; - not applicable

Waste produced during and at the end of the flights

Example: components of the balloon

Nature	Constituents	Weight (kg / balloon)
Gas	Helium	14
Envelope (spherical in shape, 12m in diameter)	polyamide and polyester	32
Polar Piece - sky	Aluminium	0.12
Polar Piece – land	Aluminium	0.6
Sensors and control valve (DMS flights)	Aluminium, nylon, steel and silicon	0.4 (PSC flights) or 0.85 (DMS flights)
Thermal protective box	Food quality Polystyrene	0.130

According to Annex III of the Madrid Protocol

- wastes for which the Madrid Protocol specifies evacuation
 - Lithium – ion batteries – see their description in Annex 1
 - Lithium batteries – see their description in Annex 2.
- non-toxic wastes which should be evacuated or incinerated
 - Expanded polystyrene protective film
 - Polyester and polyamide balloon envelopes
 - Nylon parachute sheets
 - Aluminised polyester in radar reflectors
 - Small on-board electronic units or devices (cardboard, Silicon, Copper, Teflon)
 - The nickel-coated lead shot used for the ballast of PSC balloons ; since the lead shot is nickel-coated, it will not dissolve into the water column and is inert.

Conclusions of the IEE

- the scientific interest of the programme cannot be refuted
- there is no alternative
- the likely impacts are less than minor or transitory
 - the wastes produced on the McMurdo site will be treated in accordance with the directives in Annex III of the Madrid Protocol
 - outside of this site, the proposed activity will generate waste which may not be evacuated from the Antarctic Treaty zone (batteries, nickel-coated lead shot)

Conclusions of the IEE

- nevertheless, the impacts on the environment of each balloon fallback point will be minor
- monitoring: the balloons' trajectories will be tracked individually and the fallback points recorded
- information of Parties on location of fallback points
- the flight statistics from the Stratéole-Vorcore campaign show that 60% of the flights ended outside the Antarctic Treaty area



Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

TERRES AUSTRALES
ET ANTARCTIQUES FRANÇAISES



Arrêté n° 2008-105 du 6 octobre 2008

Autorisant l'activité en Antarctique du Centre National d'Études Spatiales

Le préfet, administrateur supérieur des Terres australes et antarctiques françaises,

Vu la loi n° 55-1052 du 6 août 1955 portant statut des Terres australes et antarctiques françaises et de l'île de Clipperton ;

Vu le décret n° 2008-919 du 11 septembre 2008 pris pour l'application du statut des Terres australes et antarctiques françaises ;

Vu le code de l'environnement, et notamment ses articles R 712-1 à R 714-2 ;

Vu la demande de l'intéressé en date du 12 juillet 2008 ;

Vu l'avis du comité de l'environnement polaire en date du 23 septembre 2008 ;

Sur proposition du secrétaire général,

Arrête :

Art. 1^{er} : Autorisation est donnée au CNES de conduire l'activité en Antarctique intitulée « Concordiasi », comme décrite en annexe.

Responsable de l'activité	M. Philippe Cocquerez, chef du projet
Intitulé de l'activité	Concordiasi Lâchés de ballon depuis la base américaine de Mc Murdo
Période	D'août à octobre 2009
Lieux de l'activité	Station Mc Murdo
Accès à une ZSPA	non