

# The Sky of Montsec: How a Dark Sky is Impacting the Economy of a Rural Area in Catalonia



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Montsec is a calcareous mountain range in the north-east of the Iberian Peninsula (Spain). This area showed excellent parameters to develop activities around astronomy and dark skies. For this reason the Government of Catalonia promoted the creation of Parc Astronòmic Montsec. Some studies showed an estimation of 2.5MEuros of economic activity generated in the area by the visitors of Parc Astronòmic Montsec.

## Montsec and its Parc Astronòmic

Montsec is a calcareous mountain range of more than 40 kilometers long, covering an area of 18696 hectares divided between Aragon and Catalonia. The Catalan side covers various municipalities in the counties of Pallars Jussà and La Noguera. This was a depressed area with a constant reduction of the inhabitants number. But with a huge number of interesting things: History, Biology, Geology and Astronomy with dark skies.

### Parc Astronòmic Montsec:

Since 90's, this area was used for amateur astronomers and they proposed to create an Astronomical Park. Parc Astronòmic Montsec (PAM) was officially opened in 2008-2009. The main objectives of PAM are:

- To offer actual infrastructures focused to research and communicate astronomy (main topic) and natural environment (geology, fauna and flora).
- These materials will allow to accomplish educational objectives in several levels (from primary education to university students) and outreach activities to general public.
- To increase scientific touristic activities that will allow to maintain regular affluence of public to the area

Using... particular weather conditions, a wonderful environment and the darkest sky of Catalonia and one of the best of Europe.



Fig. 1. Location of Montsec mountains and Parc Astronòmic Montsec



Fig. 2. Facilities of Parc Astronòmic Montsec. A research observatory (left) and Centre d'Observació de l'Univers (right) focused on outreach and education

Since 2009 close to 300000 visitors have visited Centre d'Observació de l'Univers (COU)...

Àger is just a village of around 500 inhabitants so...

What kind of impact is generated?

## The impact of PAM and astrotourism in this area

### Evolution 2001 - 2012

#### Has really astrotourism an impact in the area?

Som Montsec (We are Montsec) 2020 is the Strategic Plan for the continuous development of the area in the next years. It was issued at the beginning of 2013.

This plan did a diagnose study of the area comparing the situation in 2001 and 2012 to evaluate the impact of PAM. Of course we can not isolate the impact in this data of PAM from other possible sources but PAM is the top facility of the area according to this study.

#### Evolution of accommodation facilities and number of beds 2001-2012

	2001	2012
Facilities	47	110
Beds	2.300	3.250

#### Rural Touristic facilities

	2001	2012
Facilities	18	43
Beds	155	330

#### Youth hostels facilities

	2001	2012
Facilities	5	13
Beds	393	909

#### Not only PAM. There are more astrotourism activities...

- Astronomical Touristic Packs: for weekends or for special events.
- Astronomical Menu in some restaurants
- Night sailing
- Observations in historical points
- 30 Starlight guiders in the area of Montsec



Fig. 3. Some astrotourism activities (left) and map of Starlight Reserve and Touristic Destination (right)



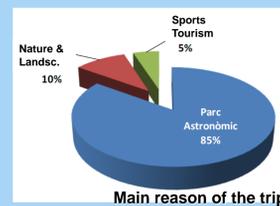
### Impact of PAM visitors

#### Are PAM visitors generating an impact to Economy?

Until 2014 only evaluation of the quality of our visits gave us some information of the profile of our visitor.

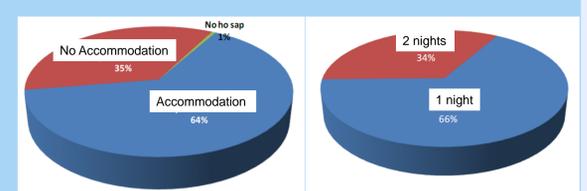
In Autumn 2014, a test study was made with a short interview to evaluate their profile and impact in the area. This study has been updated several times and here 2017 information is showed.

#### Is PAM attracting visitors to Montsec?



Main reason of the trip

#### Are the visitors spending nights in Montsec?



#### Typical values of visitors expenses in the area

Expenses per visitor (with 2 night acc.)	100,00 Eur
Expenses per visitor (with 1 night acc.)	50,00 Eur
Expenses per visitor (without acc.)	7,00 Eur

#### The number of visitors is increasing...

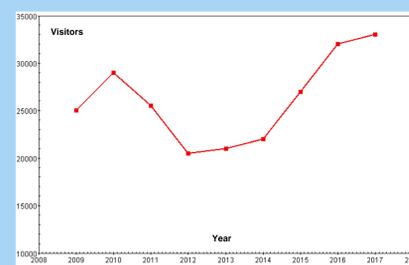


Fig. 4. Evolution of visitors to Parc Astronòmic Montsec

#### Is PAM a good option for Montsec?

With the values of expenses and the number of visitors per year, the estimation of the impact is:

**2 500 000 Euros per year**

Public investment is 300 000 Euros per year so

**“YES, PAM is a good option for Montsec”**