



رصدخانه ملی ایران



## Site characterization Iranian national Observatory (INO)

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## Khajeh Nasir Observatory



# Ulugh Beg Observatory



Jamshid Kashani invented the double quadrant Alt-Az

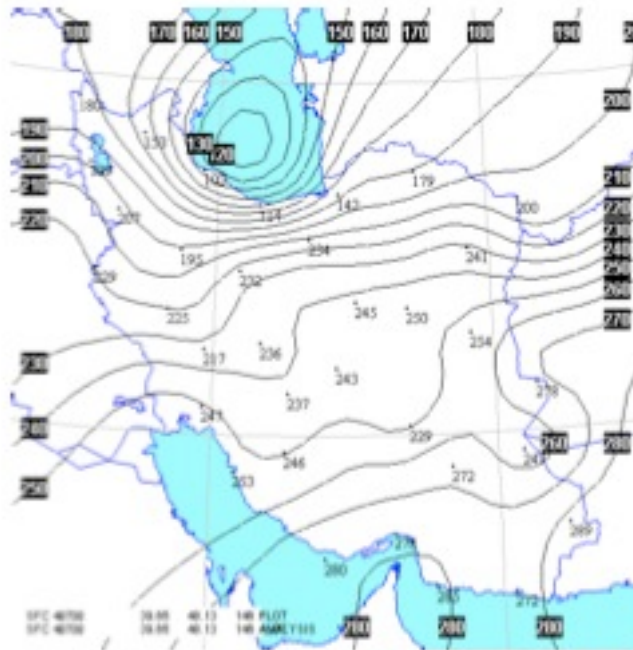
# Where are WE?



## Site selection

Meteosat cloud coverage data between 1983 and 1993 were studied and 33 regions across the country were identified.

Nasiri et al 2006



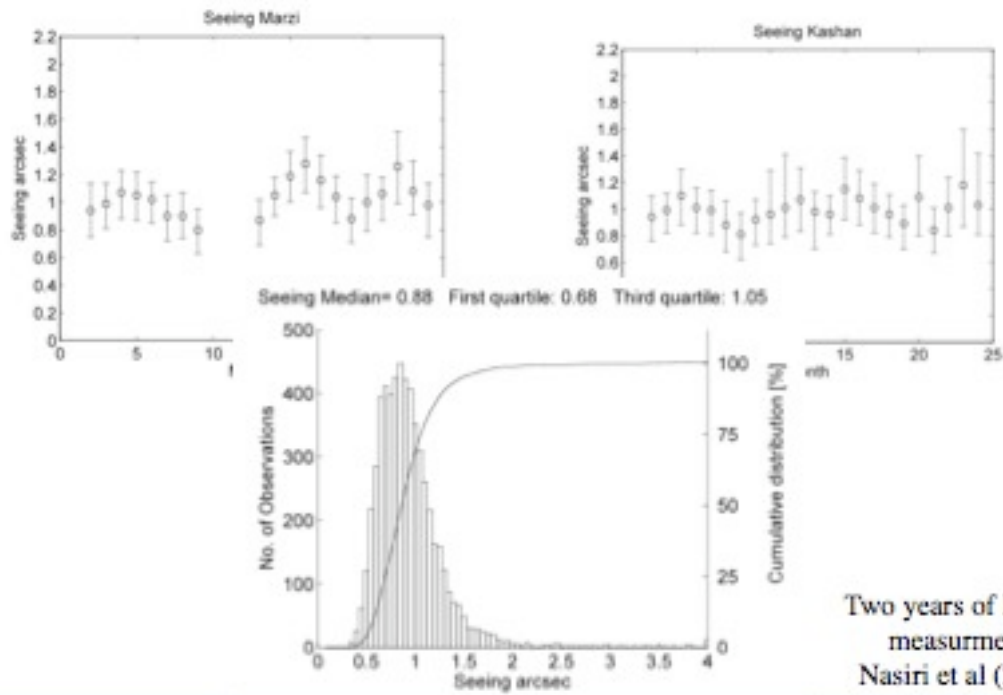
## Site Selection

- Clear Sky**
- Altitude**
- Seeing**
- Light Pollution**
- Sky Brightness**
- Access**
- Wind**
- Topography**



Team led by Dr S. Nasiri (Zanjan Univ) - 2000 to 2007

# Seeing



Two years of DIMM  
measurements  
Nasiri et al (2006)



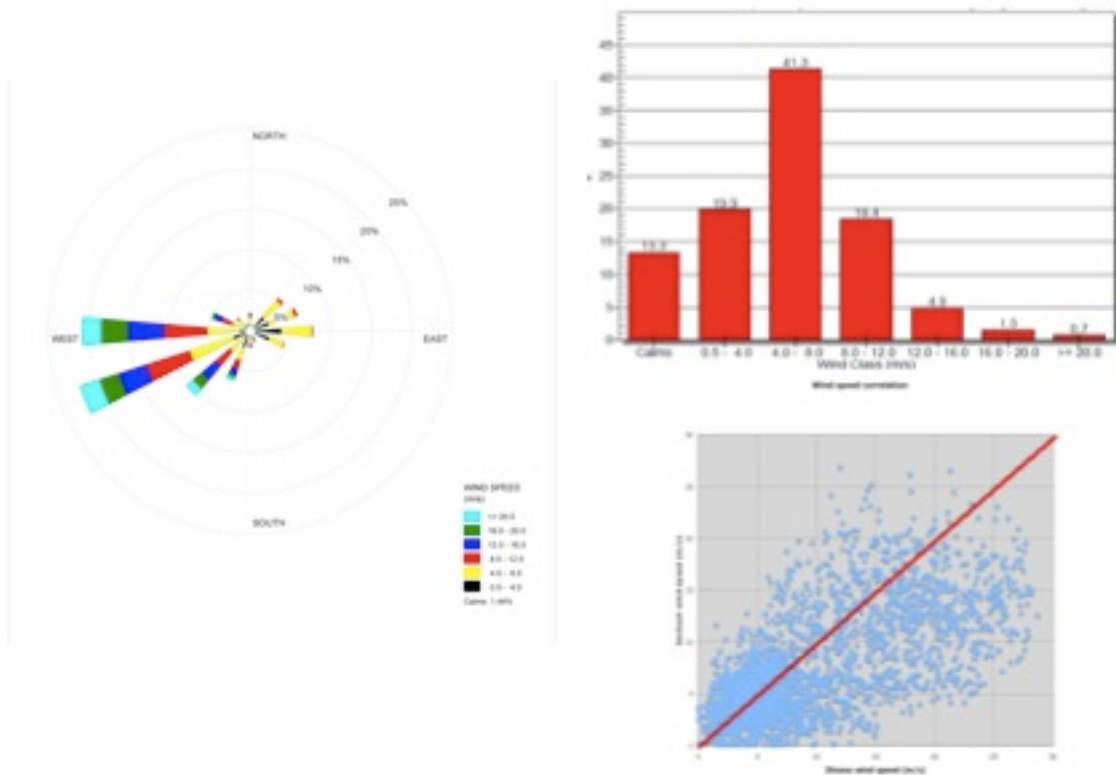
Yellow : 100 Km  
Orange: 20 Km  
Red : 2 Km



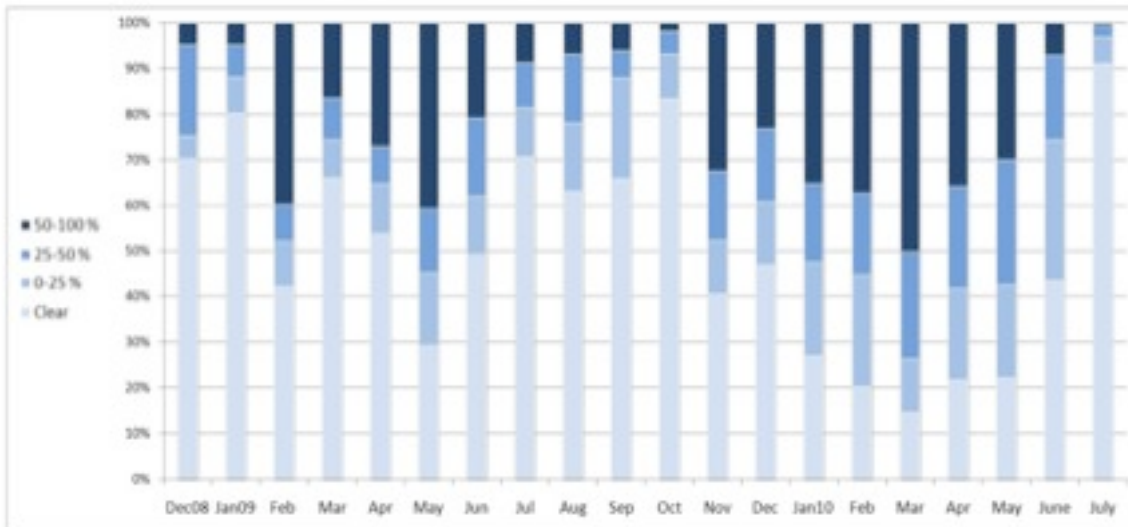
# Gargesh



## Gargesh Windrose



## Clear sky



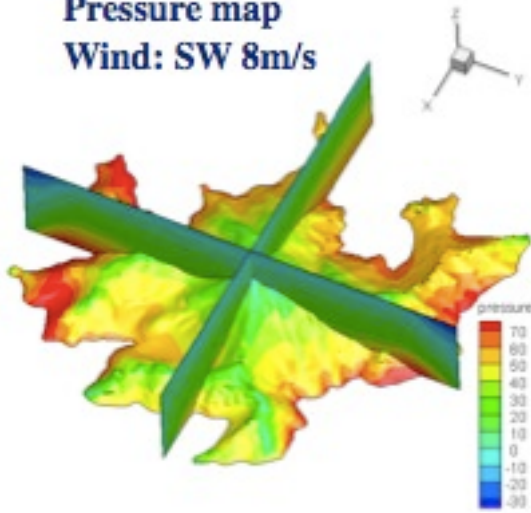
## Sky Brightness

	Dinava mag/arcsec <sup>-2</sup>	Gargesh mag/arcsec <sup>-2</sup>	Kitt Peak mag/arcsec <sup>-2</sup>
Filter B	21.8	22.3	22.7
Filter V	21.6	22.0	21.8
Filter R	20.2	20.6	20.9
Filter I	19.3	20.0	19.9

in no moon condition

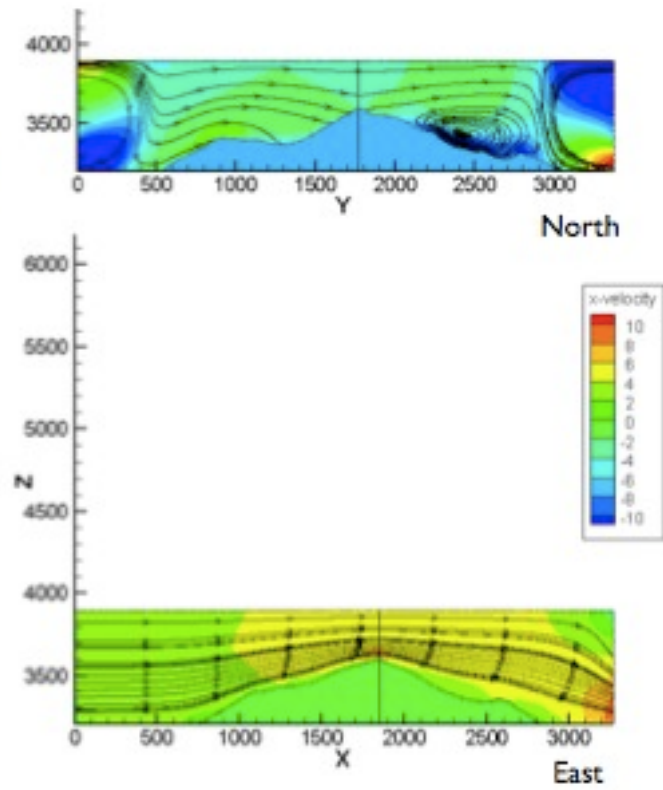


**Pressure map**  
**Wind: SW 8m/s**

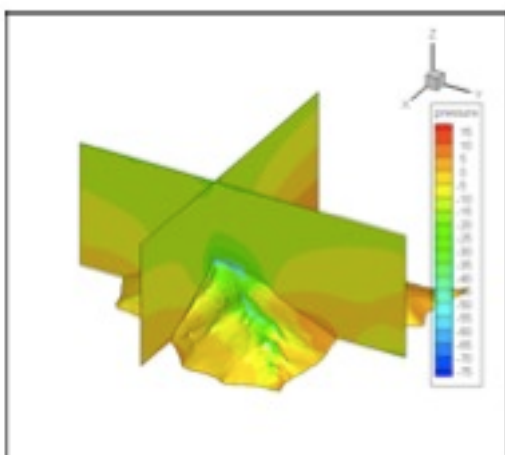


CFD modelling  
4.5 million elements

Jalali et al 2010

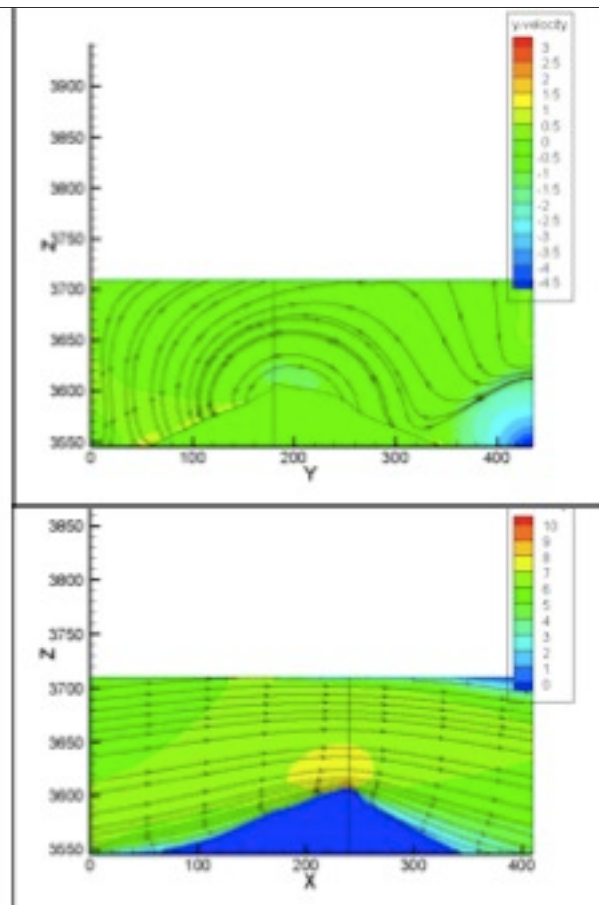


**Pressure map**  
**Wind: W 8m/s**



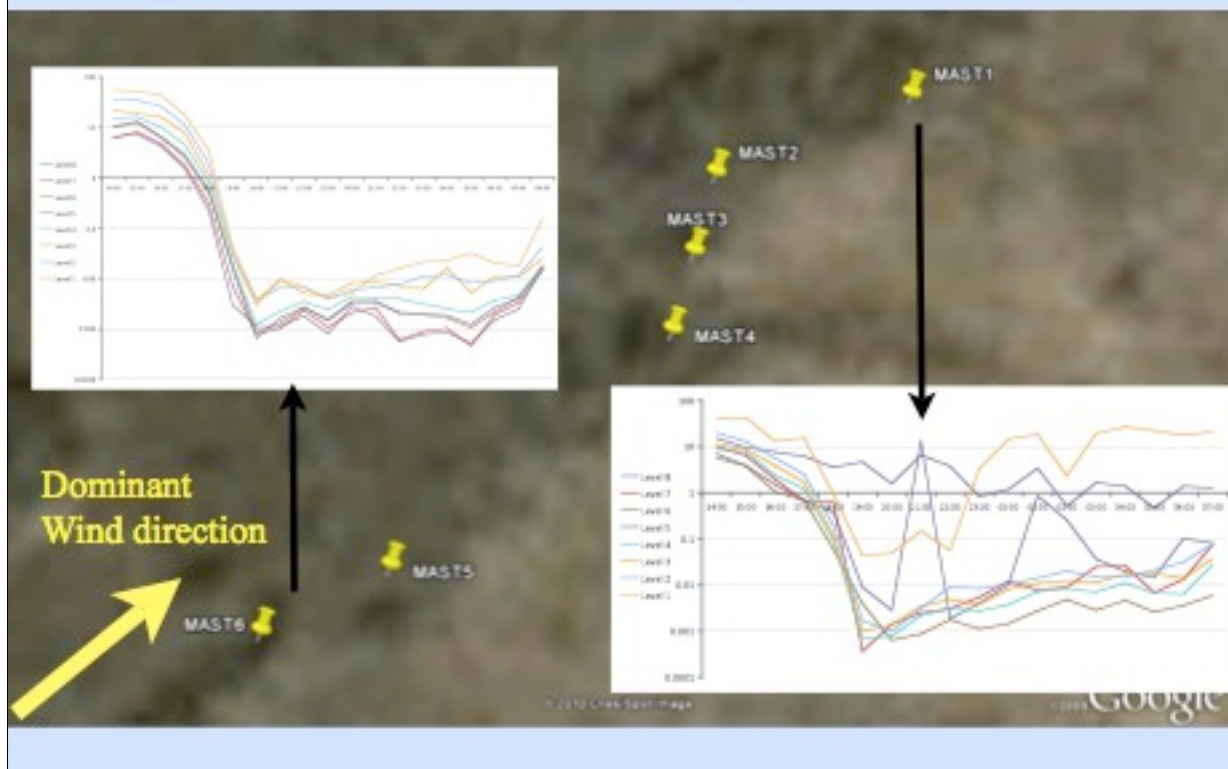
High resolution modelling

Jalali et al 2010



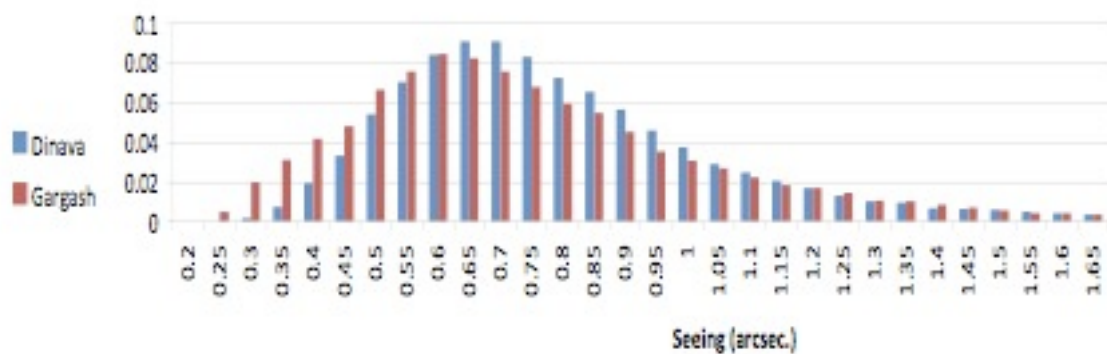


## Microthermal variations (6 masts)





## Seeing



Seeing	1st quartile	2nd quartile	3rd quartile	median
Dinava	0.60" (0.09)	0.74" (0.09)	0.91" (0.09)	0.73" (0.09)
Gargash	0.54" (0.04)	0.67" (0.04)	0.89" (0.04)	0.68" (0.04)

## The telescope

Optical 3.4m RC

Focal ratio  $f/11$

FoV 30 arcmin

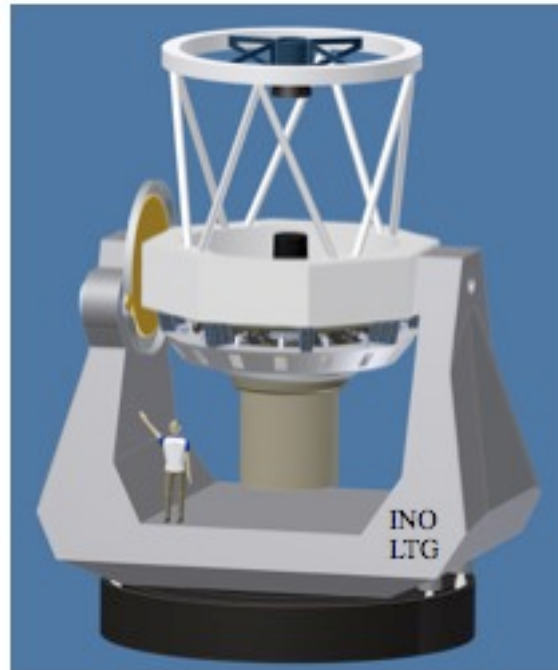
**M1:**  $f/1.5$

18 cm meniscus

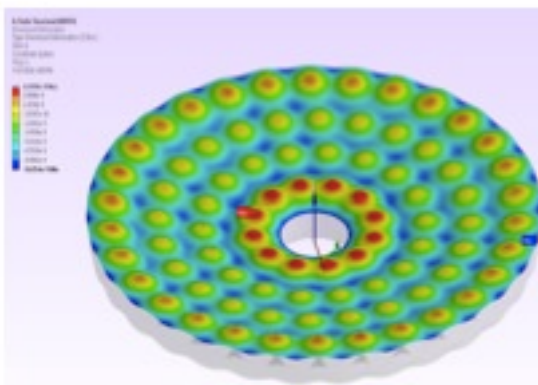
15 nm (rms)

**M2:** Conventional

later LOAO

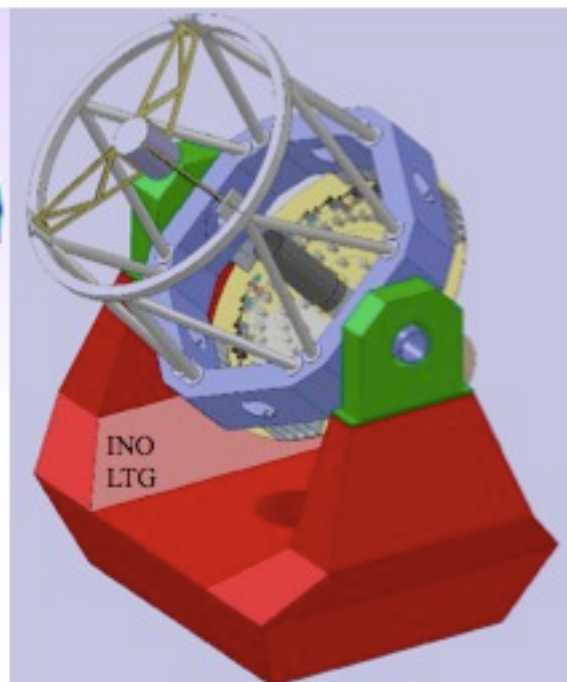


## Active primary



B. Afzalifar et al 2010

INO 3.4m first light 2015





[www.astro.ipm.ir](http://www.astro.ipm.ir)



## Symposium on **Mid-Sized Telescopes:** Science and Instrumentation

Dec. 20 – 21, 2010  
Kish Island, Persian Gulf, IRAN

The aim of the symposium is to discuss front-line science return from the mid-sized telescopes, including new and innovative instrumentation and effective operation for such telescopes. The symposium will address the question as what the observatories need to do with the current mid-sized telescopes when the extremely large telescopes start their operation. Topics include: science objectives, innovative instrumentation, surveys and observatory operations.

The meeting is organised by IPM School of Astronomy and the Iranian National Observatory project which aims at a construction of a 3.4m optical telescope currently being designed.