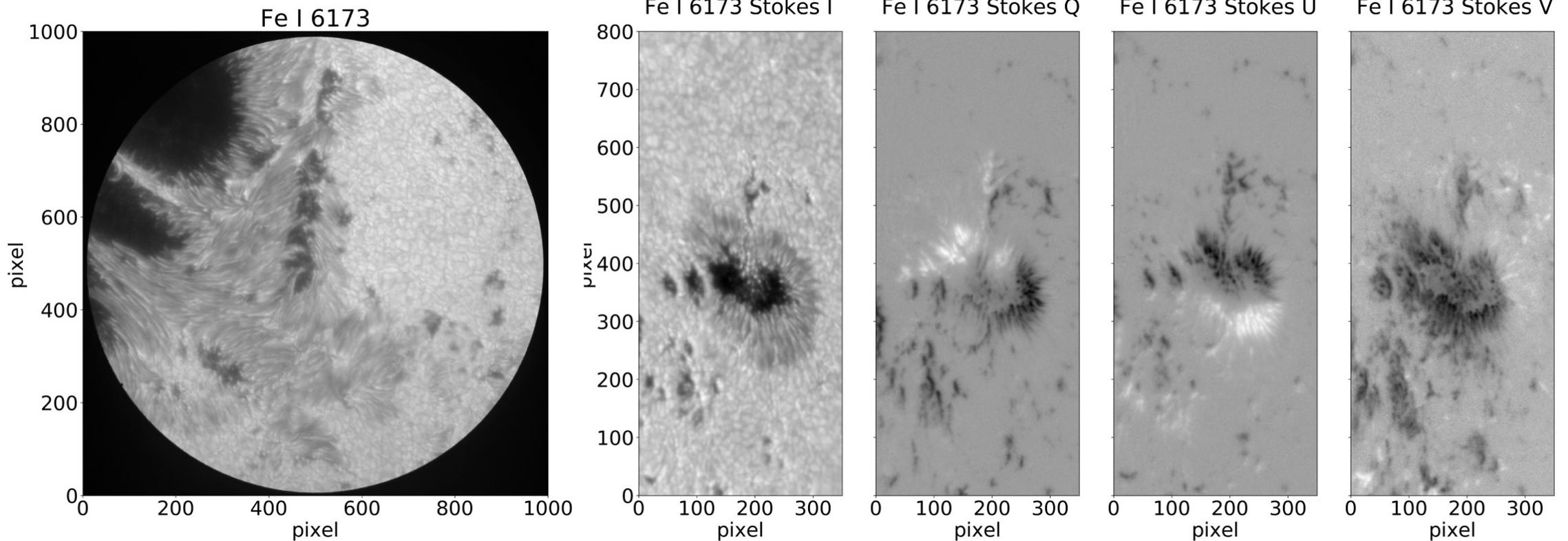


IBIS-A The IBIS data Archive

<https://www.ibis20.inaf.it>



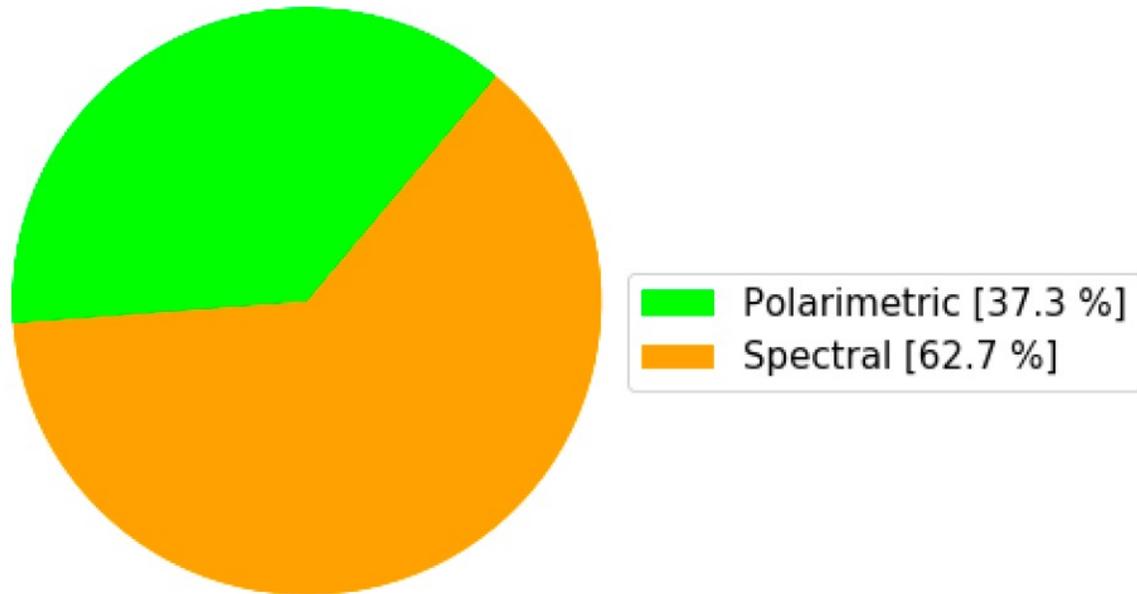
Ilaria Ermolli, Fabrizio Giorgi, Mariarita Murabito,
Vincenzo Guido, Marco Molinaro,
Salvatore Guglielmino, Paolo Romano, Giorgio Viavattene



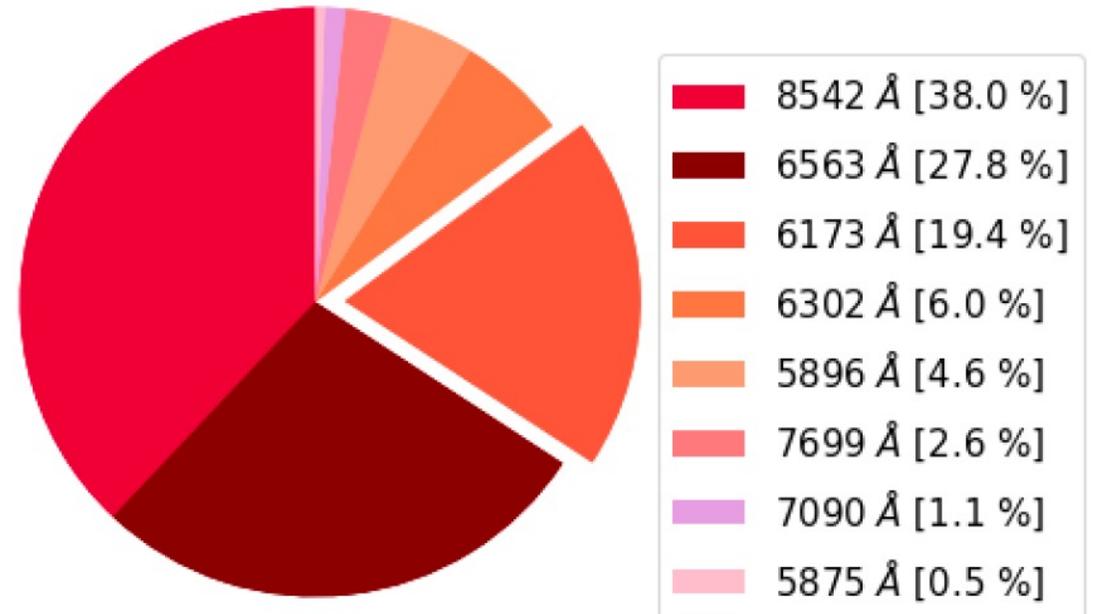
IBIS-A: data volume and targets

At present **30 TB** of data taken during **28 observing campaigns** carried out in **2008**, and from **2012** to **2019**.

Observing mode

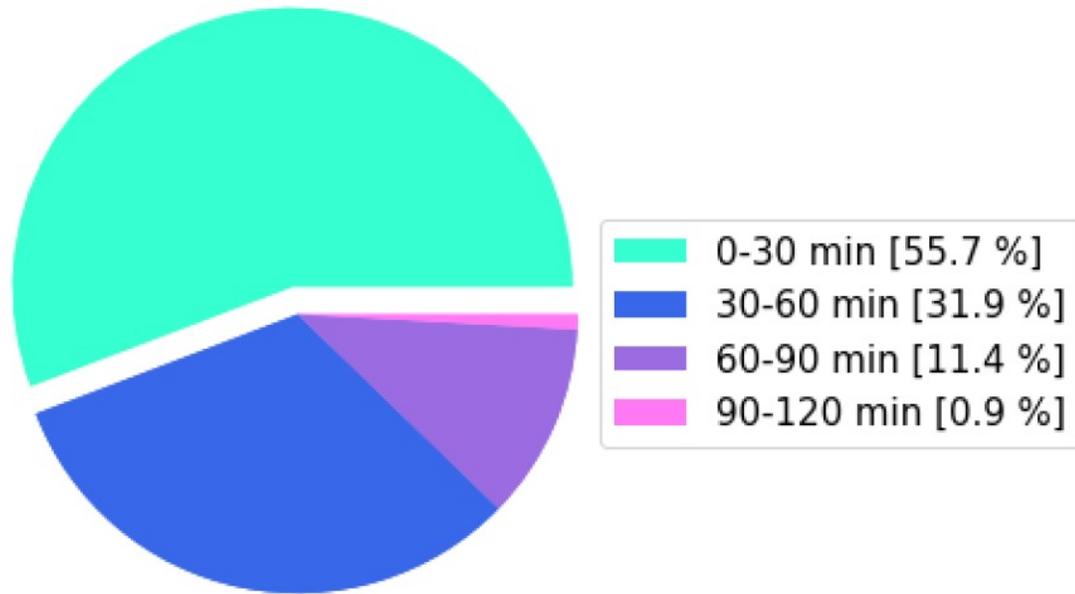


Wavelength

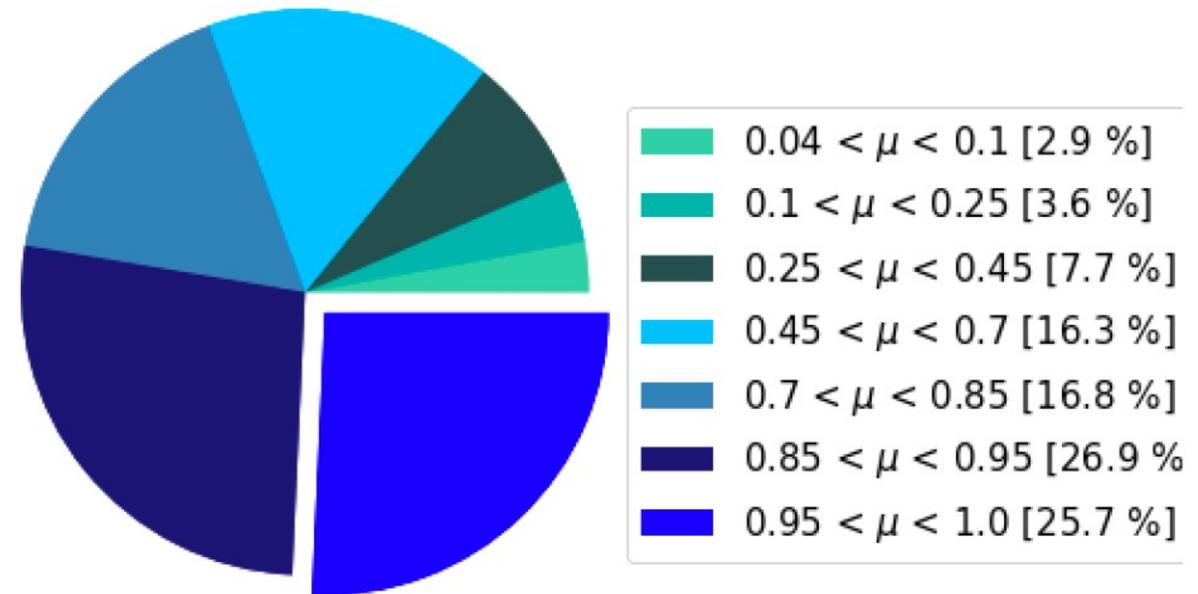


IBIS-A: data volume and targets

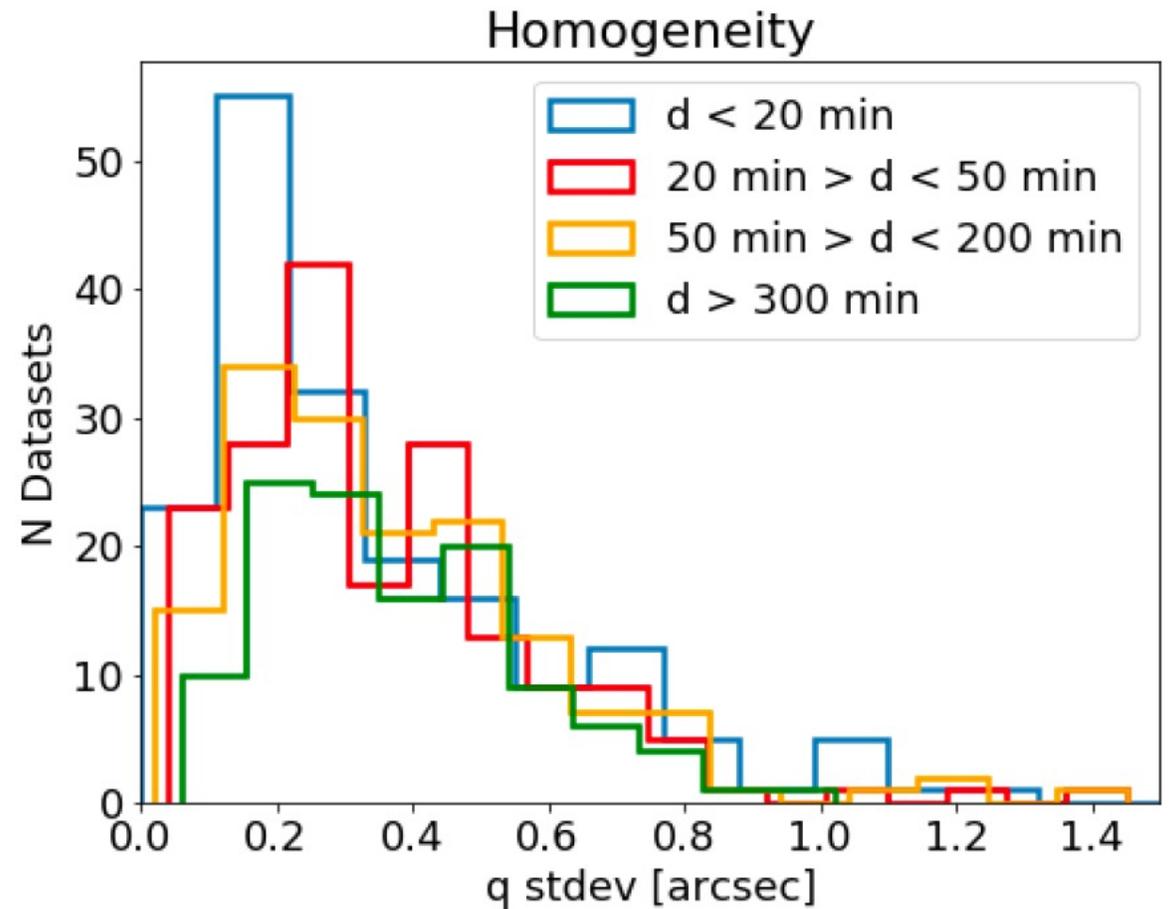
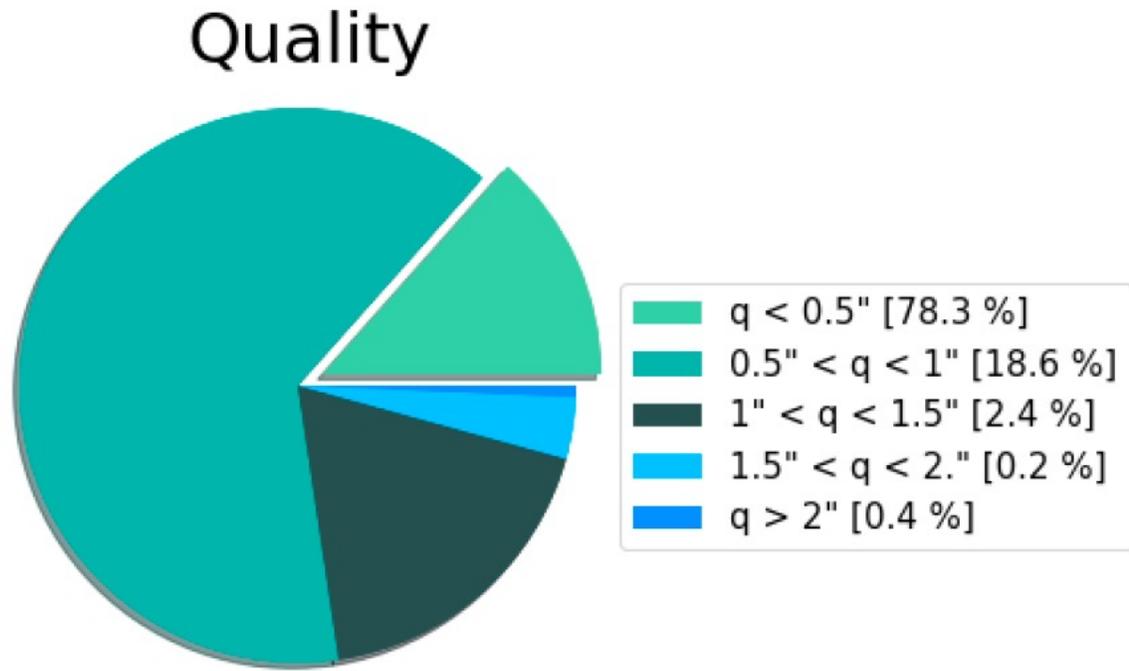
Duration



Disc position



IBIS-A: data volume and targets



FoVs include **pores** (19%), **sunspots** (30%), **quiet Sun, network** and **plages** (51%).

IBIS-A: data available

IBIS-A includes **raw** and **calibrated** observations, and **science-ready** data

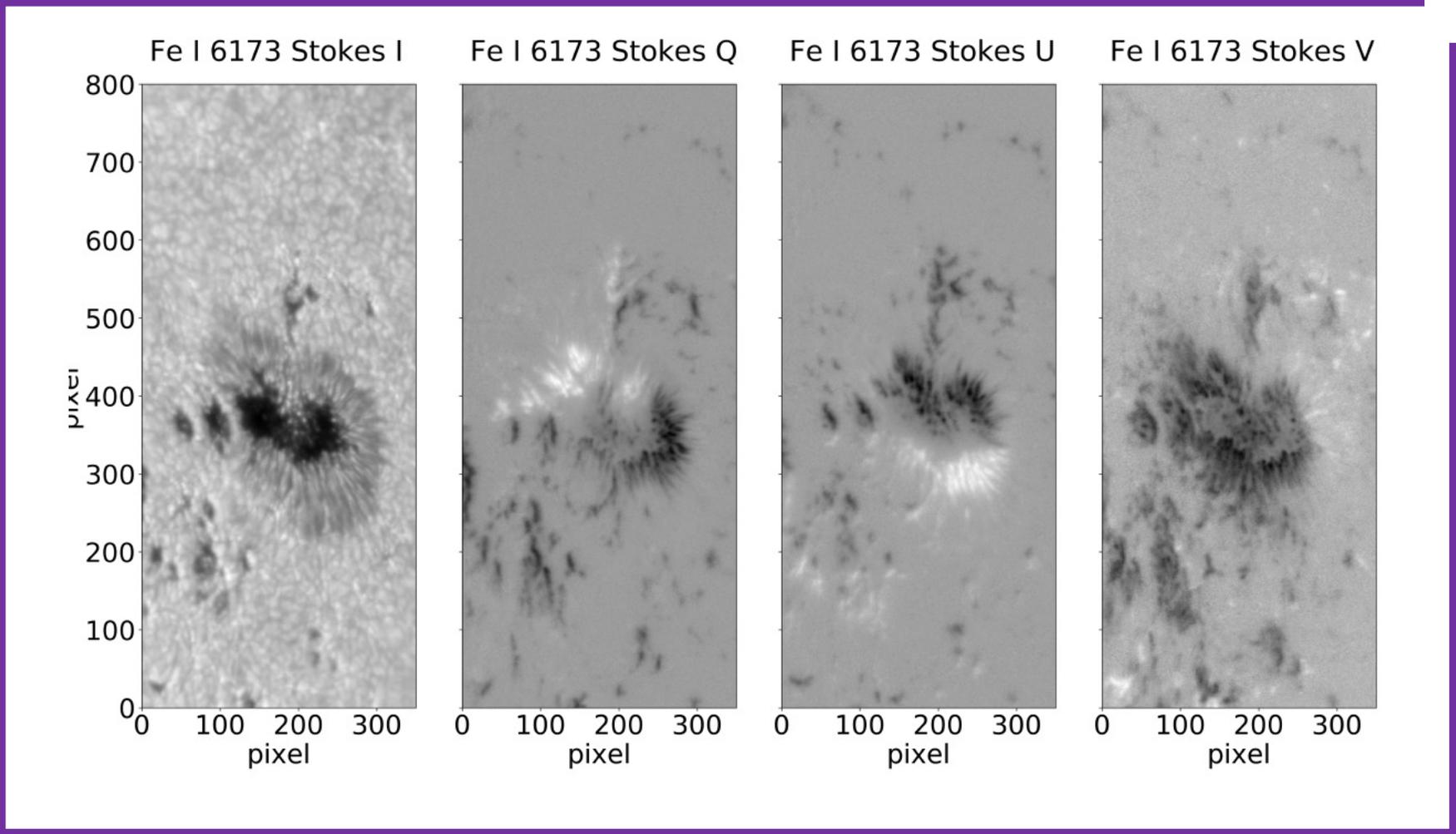
- **30% Level 1 data** calibrated for **instrumental response** and compensated for **residual seeing degradation** (MOMFBD)
Fe I 617.3 nm, H α 656.3 nm, Ca II 854.2 nm series
- **10% Level 1.5 data** as multi-dimensional arrays of **CP, LP, NCP, Vlos**
Fe I 617.3 nm and Ca II 854.2 nm series
- **23% Level 2 data** with the view of the **magnetic and velocity fields** (VFISV)
Fe I 617.3 nm series

Contextual data: INAF **full-disk** observations (cont, Ca II K, H α), **Hinode/SP, IRIS**

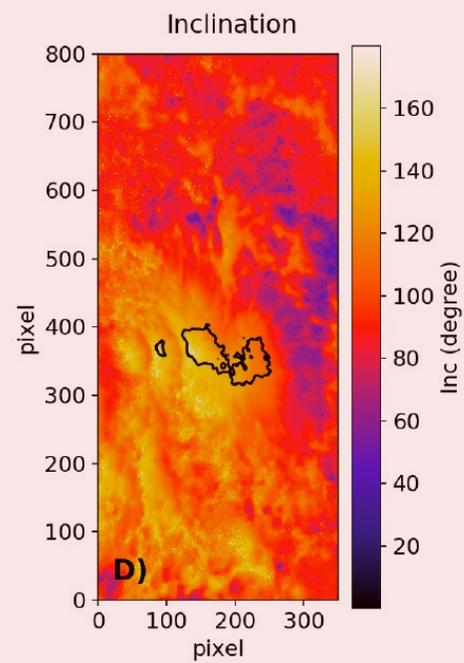
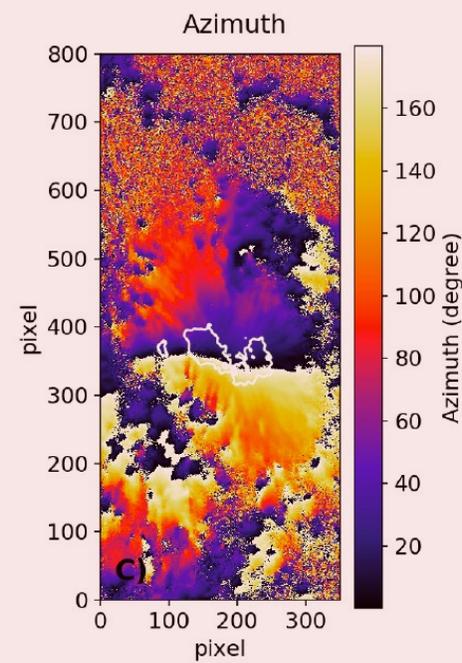
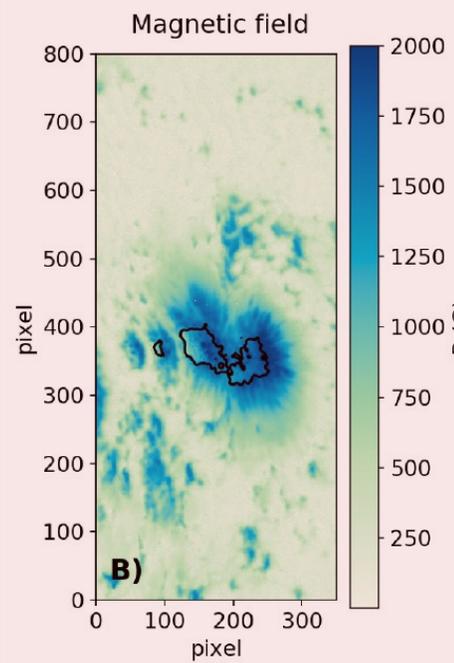
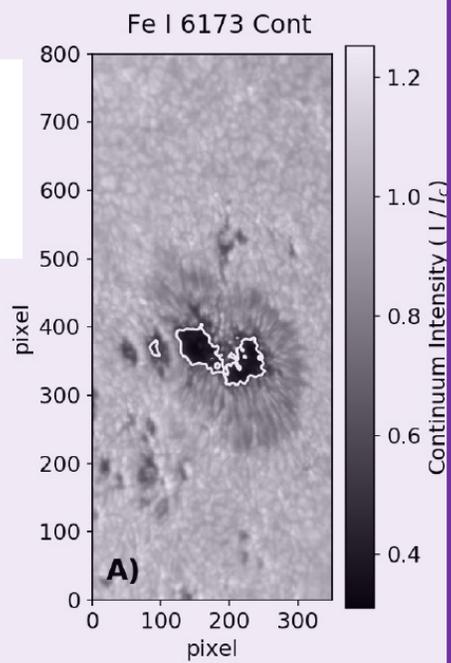
IBIS-A: data format

Level 1

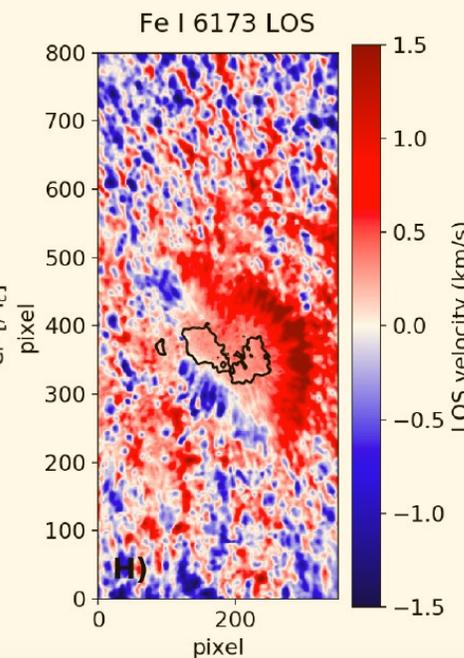
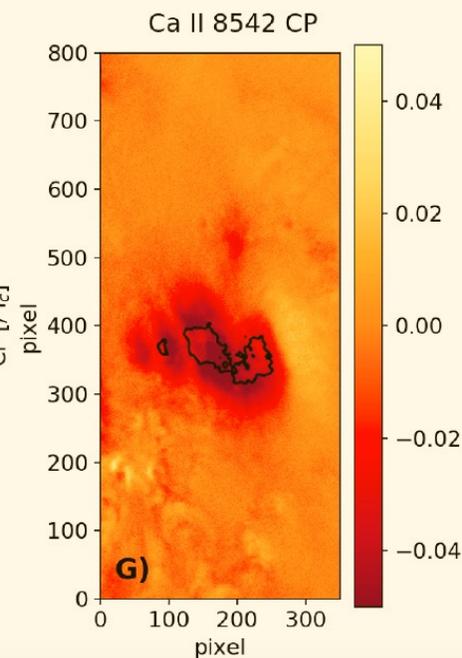
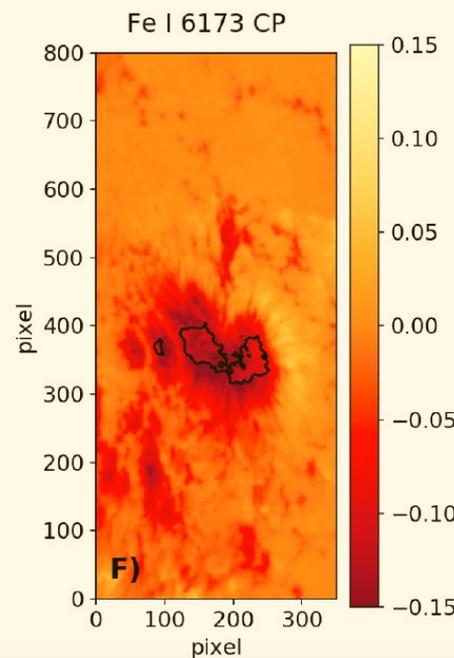
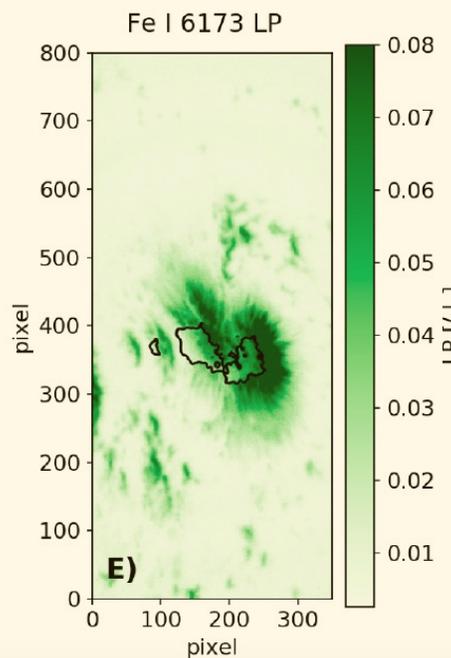
*.sav



Level 1
*.sav



Level 2
*.fits



Level 1.5
*.fits

IBIS-A: metadata

Level 2

Primary Header

```
SIMPLE = T / Written by IDL: Thu Nov 4 12:38:11 2021
BITPIX = 8 /
NAXIS = 0 /
DATE = 'Thu Nov 4 12:38:11 2021' /Date of FITS file creation
EXTEND = T / FILE MAY CONTAIN EXTENSIONS
EXTNAME = 'science' /Name of HDU
SOLARNET= 0.500000 /Fully SOLARNET-compliant=1.0, partially=0.5
OBS_HDU = 1 /This HDU contains observational data
BTYPE = 'Output inversion' /Description of what the data array represents
DATE-BEG= '2016-05-13T13:38:48' /Date of start of observations
TIMESYS = 'UTC' /
OBSRVTRY= 'NSO, Sacramento Peak' /Name of observatory
TELESCOP= 'DST' /Name of the telescope
INSTRUME= 'IBIS' /Name of instrument
OBS_MODE= 'Spectropolarimetric imaging' /settings used during obs.
WAVEBAND= 'Fe I 6173 A' /PRE-FILTER name
SCAN_DUR= 19.973000 /Time require for line scan
DST_SLAT= 11.586998 /Stonyhurst Heliographic solar lat. (deg)
DST_SLNG= 45.541883 /Stonyhurst Heliographic solar long. (deg)
SOLAR P0= -21.240328 /Solar P angle (degrees)
SOLAR B0= -2.7994148 /Solar B0 angle (degrees)
SOLAR L0= -1.1516182 /Solar L0 angle (degrees)
RSUN_ARC= 949.71210 /Apparent photospheric Solar radius in arc second
DST_SEE = 0.31494141 /Mean Seykora scintillation monitor value arcsec
PRSTEP1 = 'CALIBRATION' / First step: Bias, dark and flatfielding correct
PRPROC1 = 'IBIS pipeline' /Name of procedure used written in IDL
PRSTEP2 = 'SPECTRAL-DISTORTION-CORRECTION' / Blueshift and gain correction
PRPROC2 = 'IBIS pipeline' /Name of procedure used written in IDL
PRSTEP3 = 'DESTRETCHING' /
PRPROC3 = 'IBIS pipeline' /Name of procedure used written in IDL
PRSTEP4 = 'DEMODULATION' /
PRPROC4 = 'IBIS pipeline' /Name of procedure used written in IDL
PRSTEP5 = 'STOKES-CROSSTALK-CORRECTION' /
PRPROC5 = 'IBIS pipeline' /Name of procedure used written in IDL
PRSTEP6 = 'STOKES-INVERSION' /Processing step
PRPROC6 = 'VFISV' /Name of procedure used
ORIGIN = 'INAF - OAR' /Creator of FITS files
LEVEL = '2' /Data level of FITS file
INFO_URL= 'http://ibis.oa-roma.inaf.it/IBISA/' /IBIS archive web page
```

ext=1 header

```
XTENSION= 'IMAGE' / IMAGE extension
BITPIX = -32 /
NAXIS = 3 /Number of Axes
NAXIS1 = 350 /Spatial coordinates
NAXIS2 = 800 /Spatial coordinates
NAXIS3 = 6 /VFISV physical quantities
PCOUNT = 0 / NO GROUP PARAMETERS
GCOUNT = 1 / ONE TABLE
POS 0 = 'Cont' / Continuum intensity
POS 1 = 'B' /VFISV /Magnetic field strength
POS 2 = 'Inc' / VFISV /Inclination angle (degree)
POS 3 = 'Azi' / VFISV /Azimuth angle (degree)
POS 4 = 'VLOS' / VFISV /Line-of-sight velocity field (km/s)
POS 5 = 'Ffact' / VFISV /Filling factor
END
```

ext=2 header

```
XTENSION= 'wavelength values' / IMAGE extension
BITPIX = -32 /
NAXIS = 1 /
NAXIS1 = 21 /
PCOUNT = 0 / NO GROUP PARAMETERS
GCOUNT = 1 / ONE TABLE
N POINTS= 21 /Number of spectral points
END
```

IBIS-A: User interface – Search form

IBIS-A Home **Search Form** Useful links Documentation Contacts

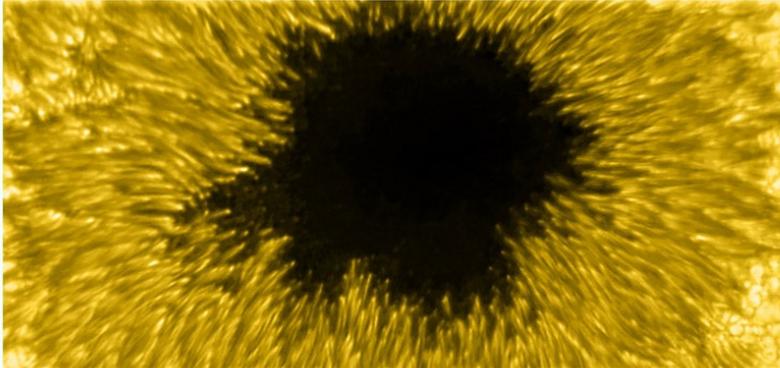


Browsing the IBIS-A does not require authentication, but users have to register and log-in in order to be able to request and download data. Principal Investigators of proposals for IBIS observations have exclusive access to their data for the duration of a proprietary period, normally of one year, after which the data becomes available to the community at large.

Currently available data 

You can browse the archive by applying different search criteria. Data range is always a parameter, but you may also choose to search data by Target, Disc position, Observing mode. You can perform your data search by combining multiple parameters. Once you have selected the values for each of the parameters that you wish to search for, press the button labeled 'Submit'. A status page appears while the system browses the archive. After a few seconds, or up to a minute or two, depending on the search parameters, a table will list the data available in the archive that match the parameters set in the search form.

IBIS Archive



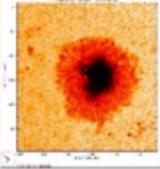
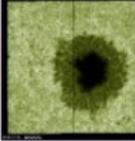
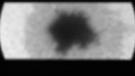
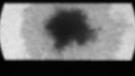
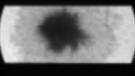
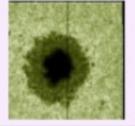
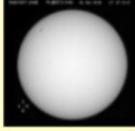
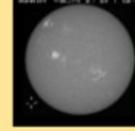
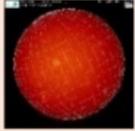
A sharp view of the Sun obtained with the IBIS at the NSO/Dunn Solar Telescope (New Mexico, USA). The image shows remarkable details of the large sunspot seen in AR NOAA 12546 near the central meridian [S07W07].

Observer: Marco Stangalini (INAF) et al.
Image processing: Fabrizio Giorgi (INAF)
Wavelength: Fe I 617.3 nm line (continuum)

<https://www.ibis20.inaf.it>

<http://ibis.oa-roma.inaf.it/IBISA/>

IBIS-A: summary of available data

Date	Hour	Target	Reduced	Preview	Lambda (N° point)	N° SCAN	INAF full-disk data			Hinode	IRIS
							Red	CaIIK	H-alfa		
19/05/2016	15:03:10	-			6173 Stokes (21) 8542 Stokes (21)	25					
19/05/2016	18:15:51	Sunspot			6173 Stokes (21) 8542 Stokes (21)	23					
19/05/2016	20:29:53	Sunspot			6173 Stokes (21) 8542 Stokes (21)	8					
19/05/2016	20:55:07	Sunspot			6173 Stokes (21) 8542 Stokes (21)	1					
20/05/2016	13:53:06	Sunspot	X		6173 Stokes (21) 8542 Stokes (21)	319					
05/10/2016	15:06:58	Pore	X		8542 Stokes (11) 6563 I (14)	200					
06/10/2016	15:58:20	Quiet Sun	X		8542 Stokes (11) 6563 I (14)	200					
06/10/2016	16:55:16	Quiet Sun	X		8542 Stokes (11) 6563 I (14)	176					

IBIS-A: Browsing and downloading

Browsing the IBIS-A does not require authentication, *but* users have to register in order to be able to request and download the data.

Data are packed as single zip and delivered via ftp.

<https://www.ibis20.inaf.it>

<http://ibis.oa-roma.inaf.it/IBISA/>

Thank you !