

# **Many Surveys in one Lifetime**

## **Remembering Bianca Garilli and her work**

**Marco Scodeggio**  
INAF IASF-Milano

# How the story began

It all started (professionally)  
with a Thesis project supervised  
by Peppo Gavazzi

A number of other people involved  
in WST started their career working  
with Peppo as well  
(M. Scodeggio, P. Franzetti,  
S. Zibetti, A. Gallazzi)



Milano,  
Jan 2020

# Surveys, but at which wavelength?

Bianca's professional path could have been rather different:

- 15 out of the first 20 papers she co-authored (1986-1992) have "X-ray" in the title, including all of the first ten
- Six of these are about BL Lac objects, and four are about searching for variability in X-ray sources.

Among the first 3 students to graduate with Peppo Gavazzi as supervisor, 2 have chosen a professional career in X-ray astronomy (Ginevra Trinchieri and Antonella Fruscione)



Menaggio,  
Apr 2014

# From X-rays to Optical

But then Dario Maccagni, the person sharing at the time the office with Peppo Gavazzi, and a former X-ray astronomer himself, contributed steering Bianca's career (and life) towards a different path.

Looking at papers 10 to 30 in chronological order among those co-authored by Bianca (1989-1997), 14 are about clusters of galaxies, (8 about photometry, 4 about spectroscopy, 2 contain a mix of photometry and spectroscopy)



Milano,  
Jan 2020



# Spectroscopic Surveys

Spectroscopic surveys make a big splash in European astronomy in the 1990s, primarily based on an Italy – France connection (or should we say competition??)

Astron. Astrophys. 325, 954–960 (1997)

ASTRONOMY  
AND  
ASTROPHYSICS

THE ASTROPHYSICAL JOURNAL, 455:60–74, 1995 December 10  
© 1995 The American Astronomical Society. All rights reserved. Printed in U.S.A.

## The ESO Slice Project (ESP) galaxy redshift survey\*

### I. Description and first results

G. Vettolani<sup>1</sup>, E. Zucca<sup>2,1</sup>, G. Zamorani<sup>2,1</sup>, A. Cappi<sup>2</sup>, R. Merighi<sup>2</sup>, M. Mignoli<sup>2</sup>, G.M. Stirpe<sup>2</sup>, H. MacGillivray<sup>3</sup>, C. Collins<sup>4</sup>, C. Balkowski<sup>5</sup>, V. Cayatte<sup>5</sup>, S. Maurogordato<sup>5</sup>, D. Proust<sup>5</sup>, G. Chincarini<sup>6,7</sup>, L. Guzzo<sup>6</sup>, D. Maccagni<sup>8</sup>, R. Scaramella<sup>9</sup>, A. Blanchard<sup>10</sup>, and M. Ramella<sup>11</sup>

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THE CANADA-FRANCE REDSHIFT SURVEY. II. SPECTROSCOPIC PROGRAM:  
DATA FOR THE 0000–00 AND 1000+25 FIELDS

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Received 1994 December 27; accepted 1995 June 19

### ABSTRACT

This paper describes the methods used to obtain the spectroscopic data and construct redshift catalogs for the Canada-France Deep Redshift Survey (CFRS). The full data set consists of more than 1000 spectra, of objects with  $17.5 \leq I_{AB} \leq 22.5$ , obtained from deep multislit data with the MARLIN and MOS-SIS spectro-

# Spectroscopic Surveys: VIMOS

Joining forces between Italy and France  
the VIMOS project is born.

Imaging, MOS and IFU spectroscopy  
To take advantage of the full FoV  
of the ESO-VLT

Bianca is in charge of the software  
side of the project, being in charge of  
both the OPS (instrument control) and  
DPS (data reduction)



The Happy VIMOS Team after the Moment of First Light

ESO PR Photo 09d/02 (13 March 2002)

© European Southern Observatory



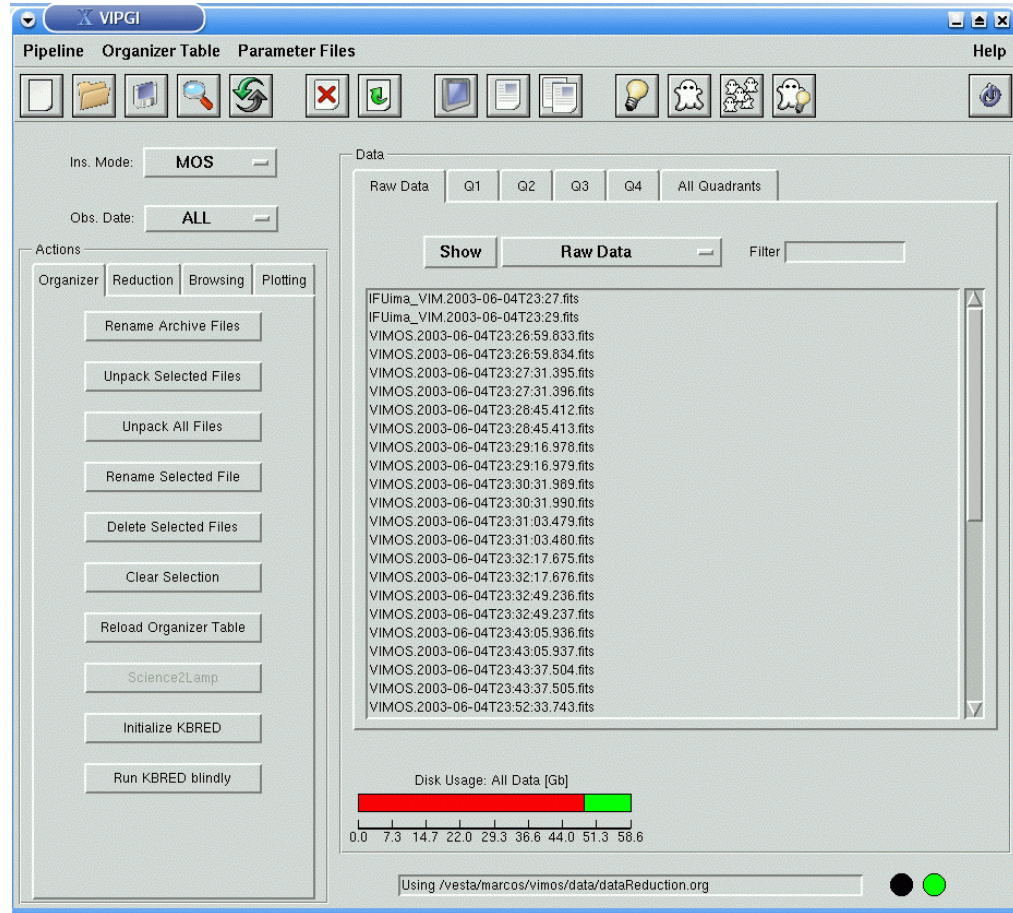
Remembering Bianca, WST Workshop, Napoli March 2025

# Spectroscopic Surveys: VIPGI

VIMOS produced a lot of data, and the DPS delivered to ESO was not user-friendly at all.

To help the VVDS team process the data relatively quickly, the VIMOS Interactive Pipeline Graphical Interface (VIPGI) software package was created.

It provides an easy to use data organizer, an easy access to the DPS data reduction recipes, and some data visualization tools





# Spectroscopic Surveys: a team is born

Bianca was among the first to realize the VIPGI concept was a rather powerful one (besides the VVDS project), and decided to put together a team of people with a good mix of astronomical and software writing expertise to expand it and make it available for future projects



Milano,  
Nov 2008

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# Spectroscopic Surveys: VVDS



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**Astronomy**  
&  
**Astrophysics**

## The Vimos VLT deep survey

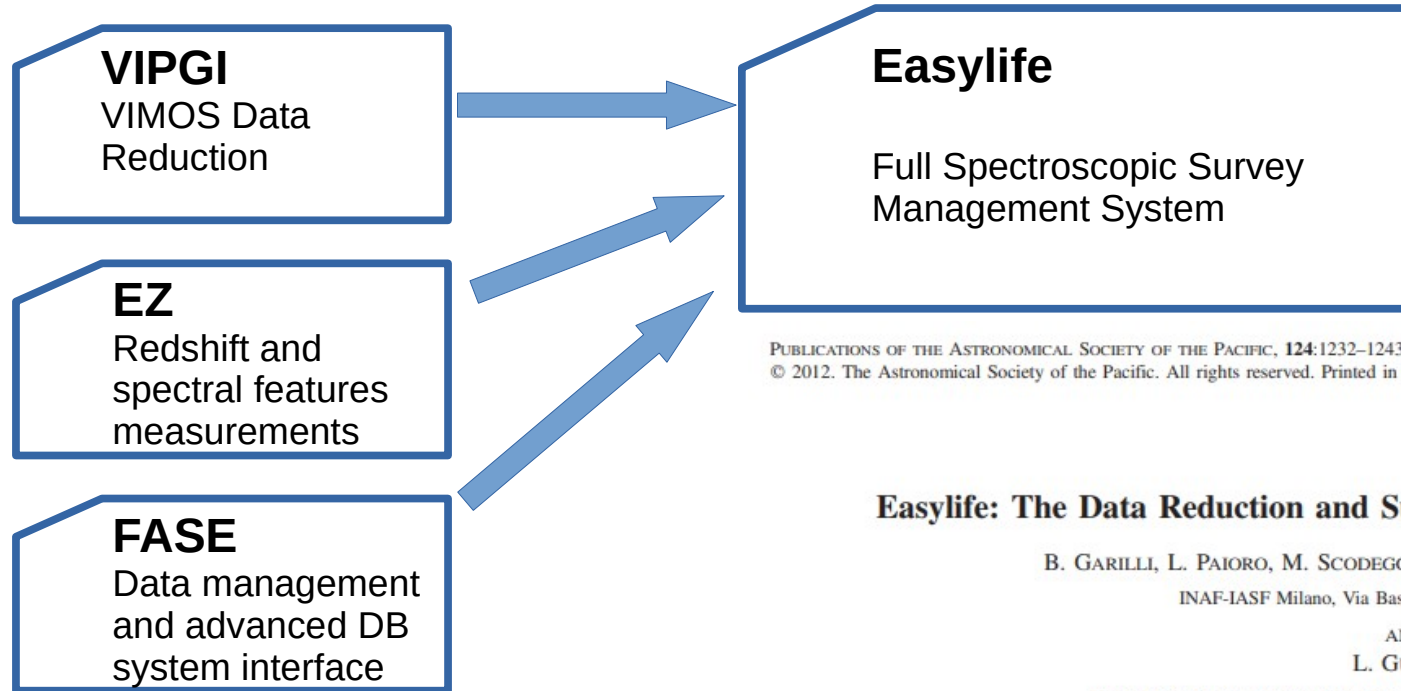
### Global properties of 20 000 galaxies in the $I_{AB} < 22.5$ WIDE survey

B. Garilli<sup>1</sup>, O. Le Fèvre<sup>2</sup>, L. Guzzo<sup>9</sup>, D. Maccagni<sup>1</sup>, V. Le Brun<sup>2</sup>, S. de la Torre<sup>2</sup>, B. Meneux<sup>1,9</sup>, L. Tresse<sup>2</sup>,  
P. Franzetti<sup>1</sup>, G. Zamorani<sup>3</sup>, A. Zanichelli<sup>4</sup>, L. Gregorini<sup>4</sup>, D. Vergani<sup>1</sup>, D. Bottini<sup>1</sup>, R. Scaramella<sup>4,13</sup>, M. Scodreggio<sup>1</sup>,  
G. Vettolani<sup>4</sup>, C. Adami<sup>2</sup>, S. Arnouts<sup>22,2</sup>, S. Bardelli<sup>3</sup>, M. Bolzonella<sup>3</sup>, A. Cappi<sup>3</sup>, S. Charlot<sup>8,10</sup>, P. Ciliegi<sup>3</sup>,  
T. Contini<sup>7</sup>, S. Foucaud<sup>21</sup>, I. Gavignaud<sup>12</sup>, O. Ilbert<sup>20</sup>, A. Iovino<sup>9</sup>, F. Lamareille<sup>7</sup>, H. J. McCracken<sup>10,11</sup>, B. Marano<sup>6</sup>,  
C. Marinoni<sup>18</sup>, A. Mazure<sup>2</sup>, R. Merighi<sup>3</sup>, S. Paltani<sup>15,16</sup>, R. Pellò<sup>7</sup>, A. Pollo<sup>17,24</sup>, L. Pozzetti<sup>3</sup>, M. Radovich<sup>5</sup>, E. Zucca<sup>3</sup>,  
J. Blaizot<sup>23</sup>, A. Bongiorno<sup>21</sup>, O. Cucciati<sup>9,14</sup>, Y. Mellier<sup>10,11</sup>, C. Moreau<sup>2</sup>, and L. Paoro<sup>1</sup>

*(Affiliations can be found after the references)*

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# Spectroscopic Surveys: tools



PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC, **124**:1232–1243, 2012 November  
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## Easylife: The Data Reduction and Survey Handling System for VIPERS

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*Received 2012 August 21; accepted 2012 October 03; published 2012 October 24*

**ABSTRACT.** We present Easylife, the software environment developed within the framework of the VIPERS project for automatic data reduction and survey handling. Easylife is a comprehensive system to automatically reduce spectroscopic data, to monitor the survey advancement at all stages, to distribute data within the collaboration, and to release data to the whole community. It is based on the OPTICON-founded project FASE, and inherits the FASE capabilities of modularity and scalability. After describing the software architecture, the main reduction

# Spectroscopic Surveys: VIPERS



Cernobbio,  
May 2017

Remembering Bianca, WST Workshop, Napoli March 2025



# Spectroscopic Surveys: VIPERS



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Krackow,  
Oct 2014

# Spectroscopic Surveys: VIPERS



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**Astronomy  
&  
Astrophysics**

## The VIMOS Public Extragalactic Survey (VIPERS)★

### First Data Release of 57 204 spectroscopic measurements

B. Garilli<sup>1</sup>, L. Guzzo<sup>2,3</sup>, M. Scodeggio<sup>1</sup>, M. Bolzonella<sup>8</sup>, U. Abbas<sup>5</sup>, C. Adami<sup>4</sup>, S. Arnouts<sup>6,4</sup>, J. Bel<sup>7</sup>, D. Bottini<sup>1</sup>,  
E. Branchini<sup>9,26,27</sup>, A. Cappi<sup>8</sup>, J. Coupon<sup>11</sup>, O. Cucciati<sup>8,16</sup>, I. Davidzon<sup>8,16</sup>, G. De Lucia<sup>12</sup>, S. de la Torre<sup>13</sup>,  
P. Franzetti<sup>1</sup>, A. Fritz<sup>1</sup>, M. Fumana<sup>1</sup>, B. R. Granett<sup>2</sup>, O. Ilbert<sup>4</sup>, A. Iovino<sup>2</sup>, J. Krywult<sup>14</sup>, V. Le Brun<sup>4</sup>, O. Le Fèvre<sup>4</sup>,  
D. Maccagni<sup>1</sup>, K. Małek<sup>15</sup>, F. Marulli<sup>16,17,8</sup>, H. J. McCracken<sup>18</sup>, L. Paioro<sup>1</sup>, M. Polletta<sup>1</sup>, A. Pollo<sup>20,21</sup>,  
H. Schlegelhauser<sup>22,19</sup>, L. A. M. Tasca<sup>4</sup>, R. Tojeiro<sup>10</sup>, D. Vergani<sup>23</sup>, G. Zamorani<sup>8</sup>, A. Zanichelli<sup>24</sup>, A. Burden<sup>10</sup>,  
C. Di Porto<sup>8</sup>, A. Marchetti<sup>2,25</sup>, C. Marinoni<sup>7</sup>, Y. Mellier<sup>18</sup>, L. Moscardini<sup>16,17,8</sup>, R. C. Nichol<sup>10</sup>, J. A. Peacock<sup>13</sup>,  
W. J. Percival<sup>10</sup>, S. Phleps<sup>19</sup>, and M. Wolk<sup>18</sup>

*(Affiliations can be found after the references)*

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Remembering Bianca, WST Workshop, Napoli March 2025



# Spectroscopic Surveys: VIPERS



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**Astronomy  
&  
Astrophysics**

## The VIMOS Public Extragalactic Redshift Survey (VIPERS)

### Full spectroscopic data and auxiliary information release (PDR-2)\*

M. Scodeggio<sup>1</sup>, L. Guzzo<sup>2,3</sup>, B. Garilli<sup>1</sup>, B. R. Granett<sup>2,3</sup>, M. Bolzonella<sup>4</sup>, S. de la Torre<sup>5</sup>, U. Abbas<sup>6</sup>, C. Adami<sup>5</sup>, S. Arnouts<sup>5</sup>, D. Bottini<sup>1</sup>, A. Cappi<sup>4,7</sup>, J. Coupon<sup>8</sup>, O. Cucciati<sup>4,9</sup>, I. Davidzon<sup>4,5</sup>, P. Franzetti<sup>1</sup>, A. Fritz<sup>1</sup>, A. Iovino<sup>2</sup>, J. Krywult<sup>10</sup>, V. Le Brun<sup>5</sup>, O. Le Fèvre<sup>5</sup>, D. Maccagni<sup>1</sup>, K. Małek<sup>11</sup>, A. Marchetti<sup>1</sup>, F. Marulli<sup>4,9,12</sup>, M. Polletta<sup>1,13,14</sup>, A. Pollo<sup>11,15</sup>, L. A. M. Tasca<sup>5</sup>, R. Tojeiro<sup>16</sup>, D. Vergani<sup>17</sup>, A. Zanichelli<sup>18</sup>, J. Bel<sup>19</sup>, E. Branchini<sup>20,21,22</sup>, G. De Lucia<sup>23</sup>, O. Ilbert<sup>5</sup>, H. J. McCracken<sup>24</sup>, T. Moutard<sup>5,25</sup>, J. A. Peacock<sup>26</sup>, G. Zamorani<sup>4</sup>, A. Burden<sup>27</sup>, M. Fumana<sup>1</sup>, E. Jullo<sup>5</sup>, C. Marinoni<sup>19,28</sup>, Y. Mellier<sup>24</sup>, L. Moscardini<sup>9,12,24</sup>, and W. J. Percival<sup>27</sup>

*(Affiliations can be found after the references)*

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# Spectroscopic Surveys: VANDELS



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&  
Astrophysics**

## The VANDELS ESO public spectroscopic survey

### Final data release of 2087 spectra and spectroscopic measurements<sup>★,★★</sup>

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*(Affiliations can be found after the references)*

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Remembering Bianca, WST Workshop, Napoli March 2025

# Spectroscopic Surveys: Euclid

Bianca was the  
de-facto NISP  
Spectrograph Deputy  
Instrument Scientist

She played a  
fundamental role  
in ensuring NISP would  
have the correct  
performance for the  
Euclid Spectroscopic  
Survey, and that these  
data would be properly  
handled



Leiden,  
May 2013

Remembering Bianca, WST Workshop, Napoli March 2025



# Spectroscopic Surveys: Euclid

She was extremely knowledgeable, and not that easy to convince.

A number of times she was asked to be part of the ESA review board in charge of monitoring the development of the Euclid Science Ground Segment (data reduction pipelines)



Leiden,  
May 2013



# Spectroscopic Surveys: Euclid

Never shy to voice her displeasure if people were not putting all their effort in the work they were in charge of...

But also never shy to display her appreciation for a work done well and in time



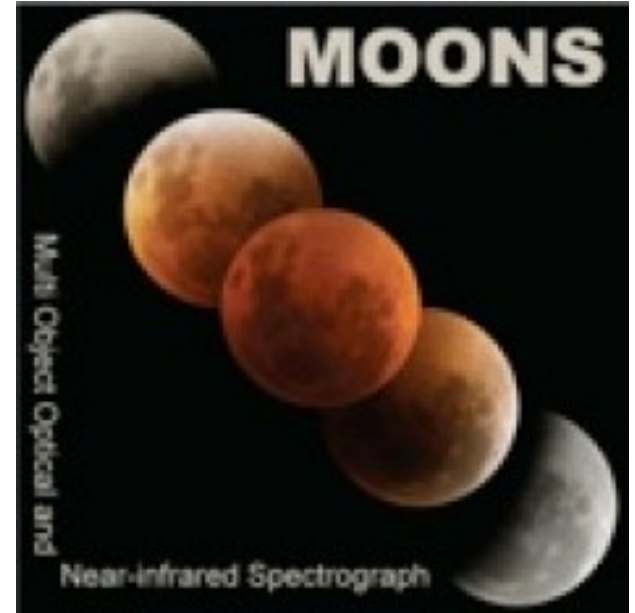
Bonn,  
Jun 2018

Remembering Bianca, WST Workshop, Napoli March 2025

# Interrupted items.....

Two projects she somehow helped start, but she could not see reach their fruition

The VLT MOONS spectrograph: 1000 fibers spectrograph for ESO-VLT



The WST proposal



# Interrupted items.....



IAU Meeting,  
Aug 2024

Remembering Bianca, WST Workshop, Napoli March 2025



# Just a quick summary...

Having spent the last 30 years of her career working at big spectroscopic Survey projects, she was part of many papers coming out of these projects.

If you search for her name in the ADS repository, you can find out she co-authored 355 refereed papers (14 as first author).

Because of the nature of these big projects, involving bigger and bigger teams, the list of her co-authors include a large fraction of the European Observational Cosmology community.

There are 16 astronomers that are co-authors in more than 150 of these papers, including G. Zamorani (258), O. Le Fèvre (212), M. Scodreggio (191), D. Maccagni (185), P. Franzetti (181)

# Not only and not always at work...



Settimo Suono Operette

Milano,  
Feb 2014

Remembering Bianca, WST Workshop, Napoli March 2025



# Not only and not always at work...



Milano,  
Feb 2014

Remembering Bianca, WST Workshop, Napoli March 2025





*That's all Folks!*

l s b e r g<sup>®</sup>