

# **Title: Radioisotopes demonstrate changes in global atmospheric circulation possibly caused by global warming**

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## **\*Corresponding Author:**

Lucrezia Terzi

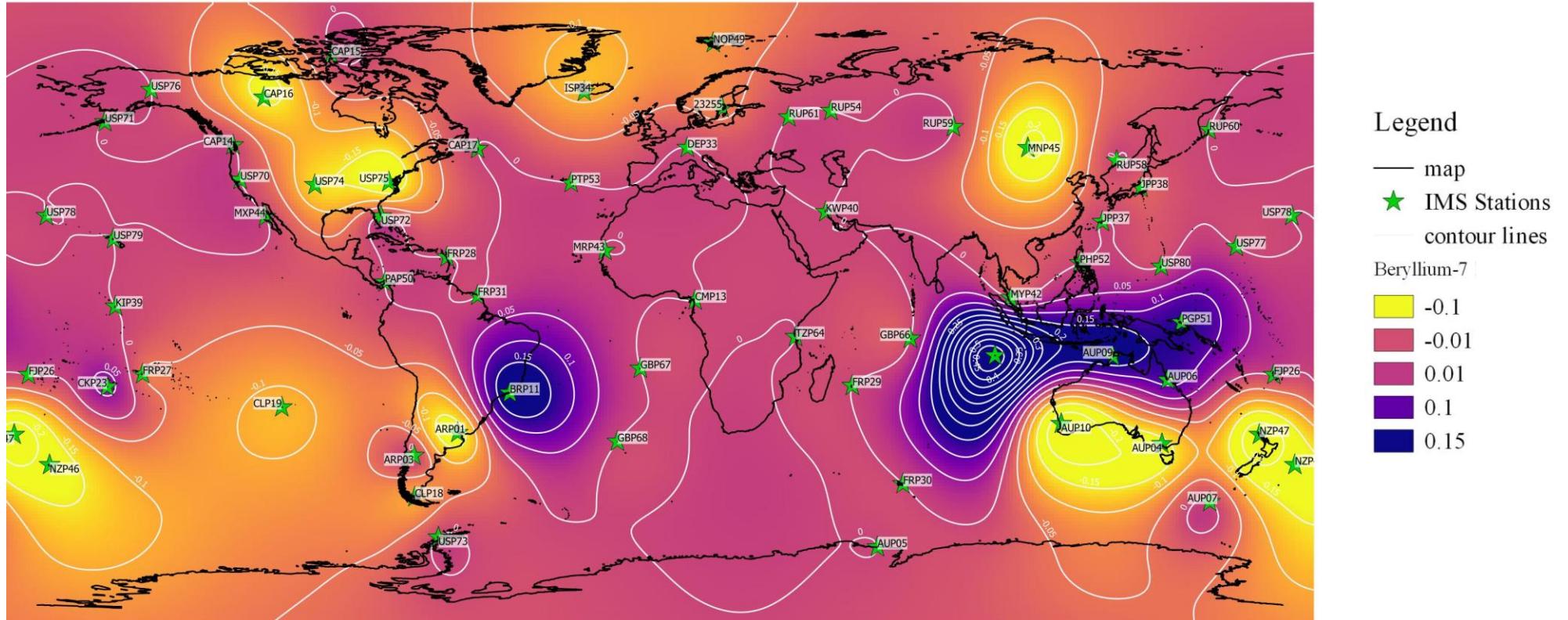
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Boeretang 200, 2400 Mol, Belgium.

<sup>b</sup> Technische Universität Wien, Atominstitut,  
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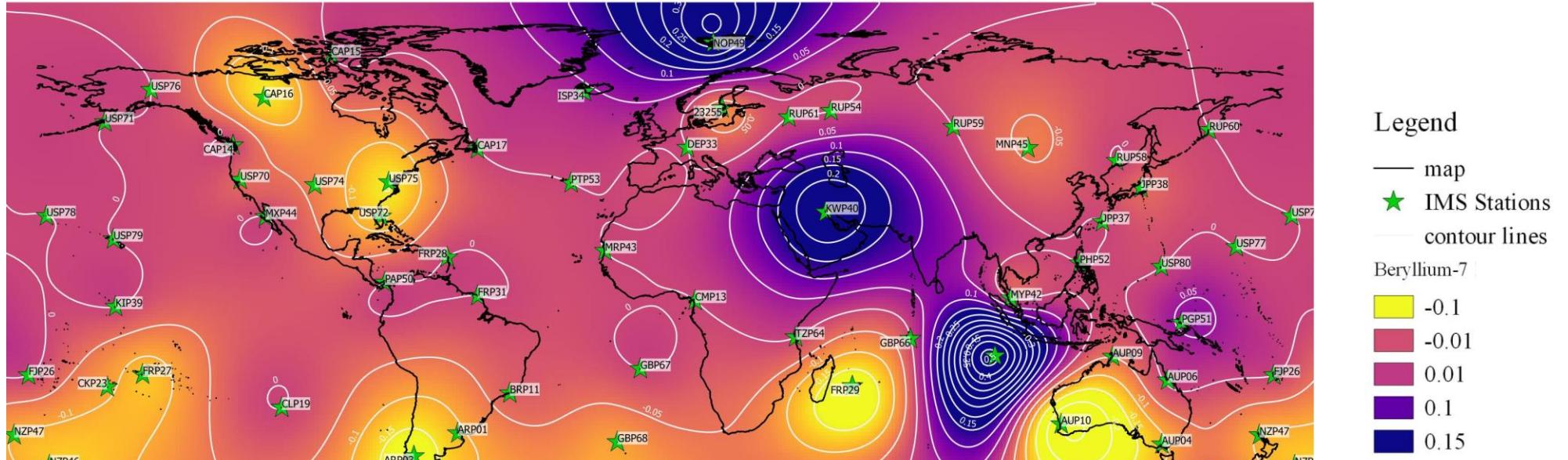
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2003

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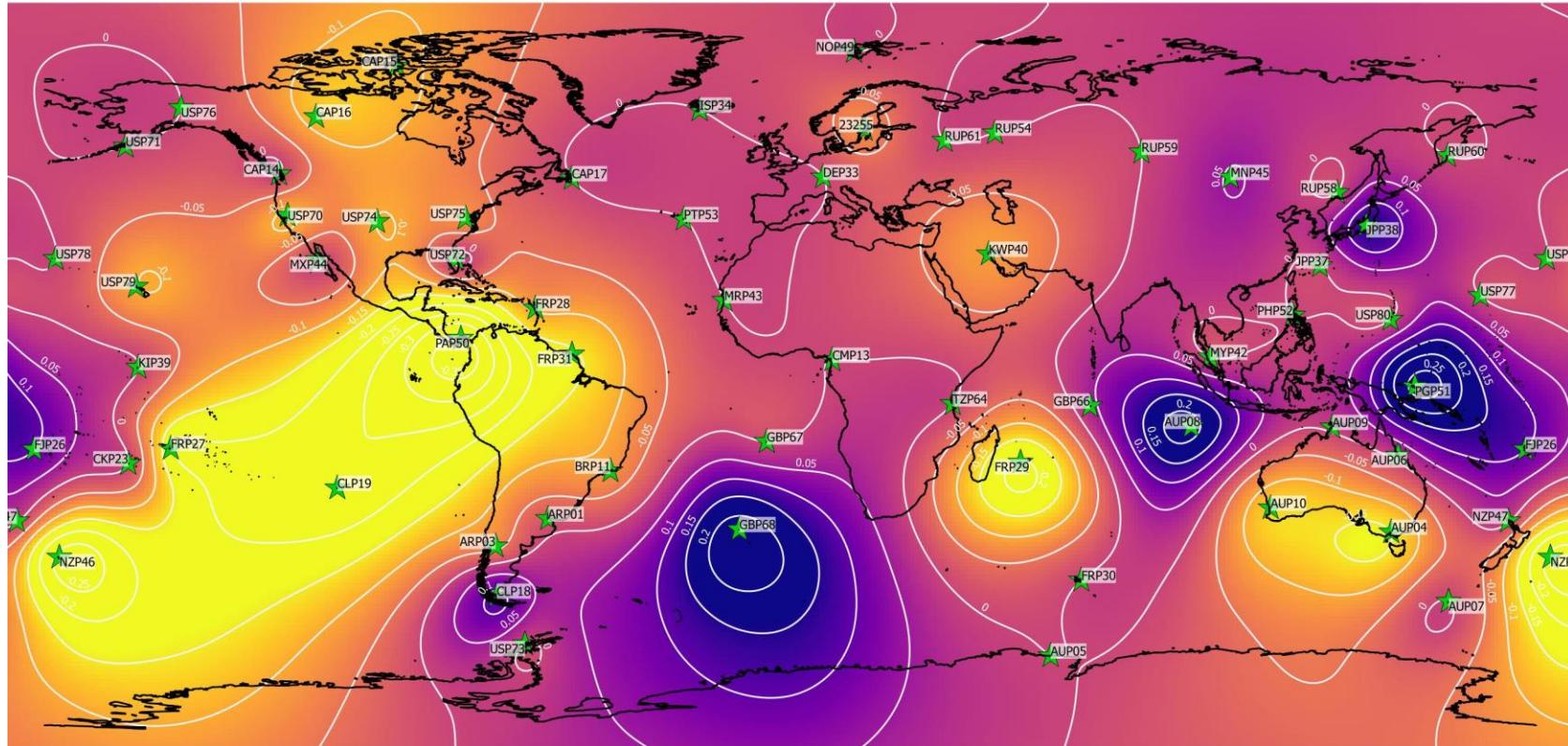
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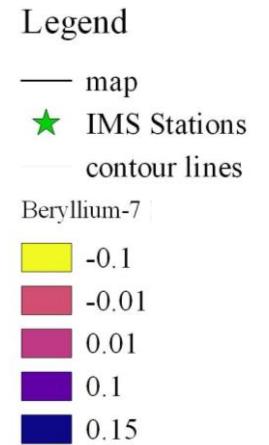
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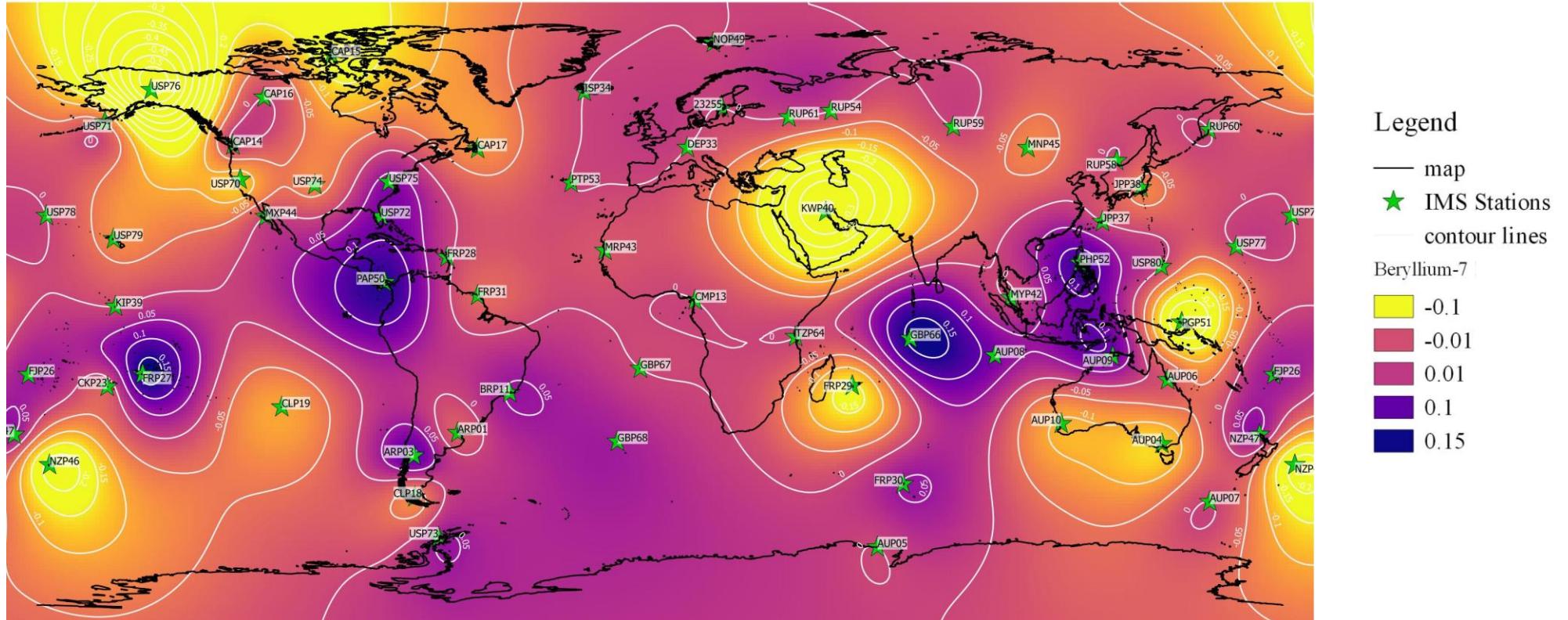


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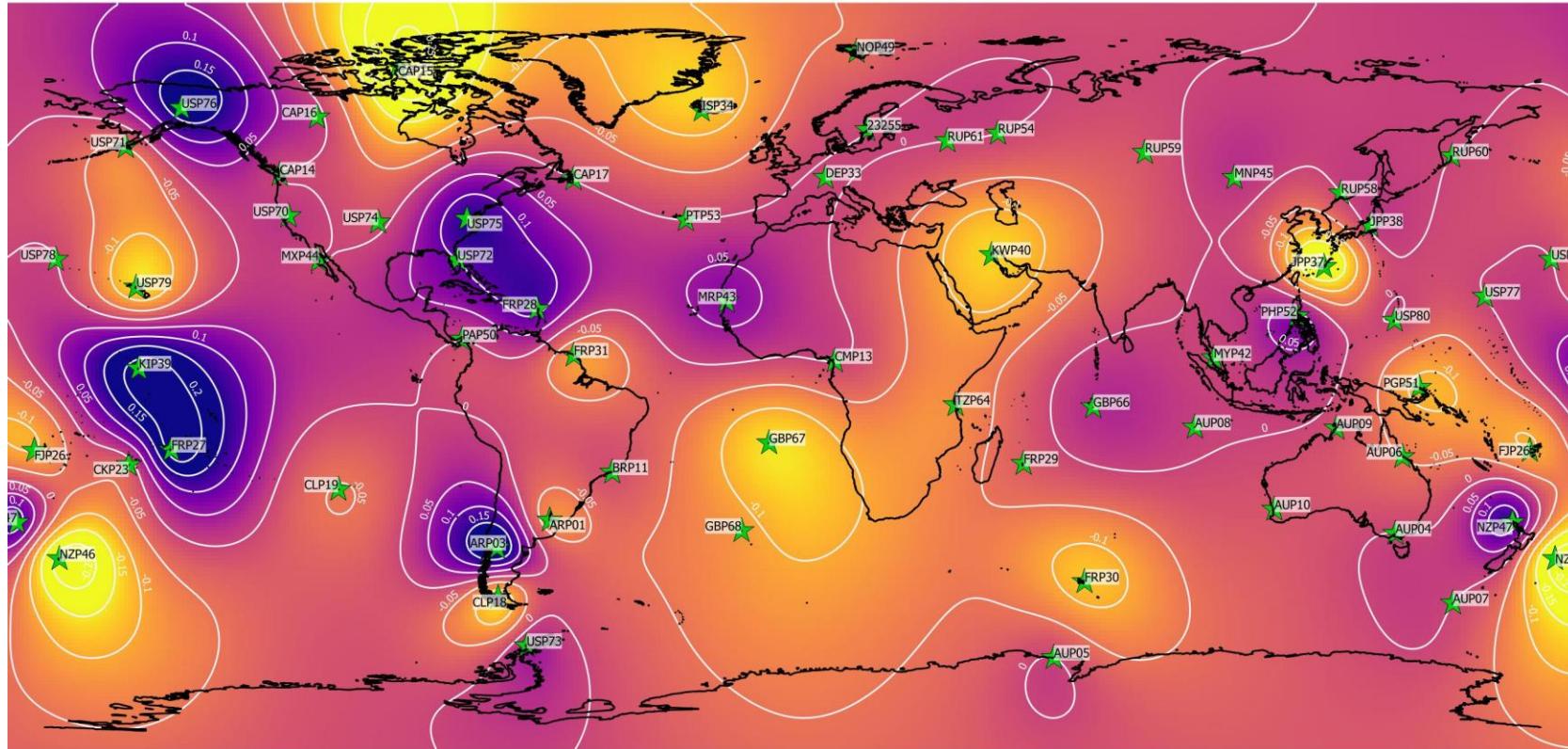
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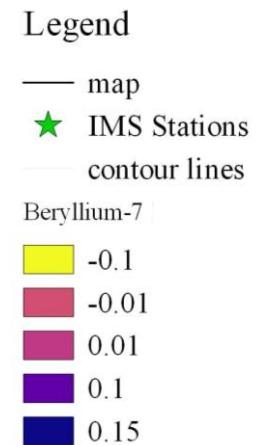
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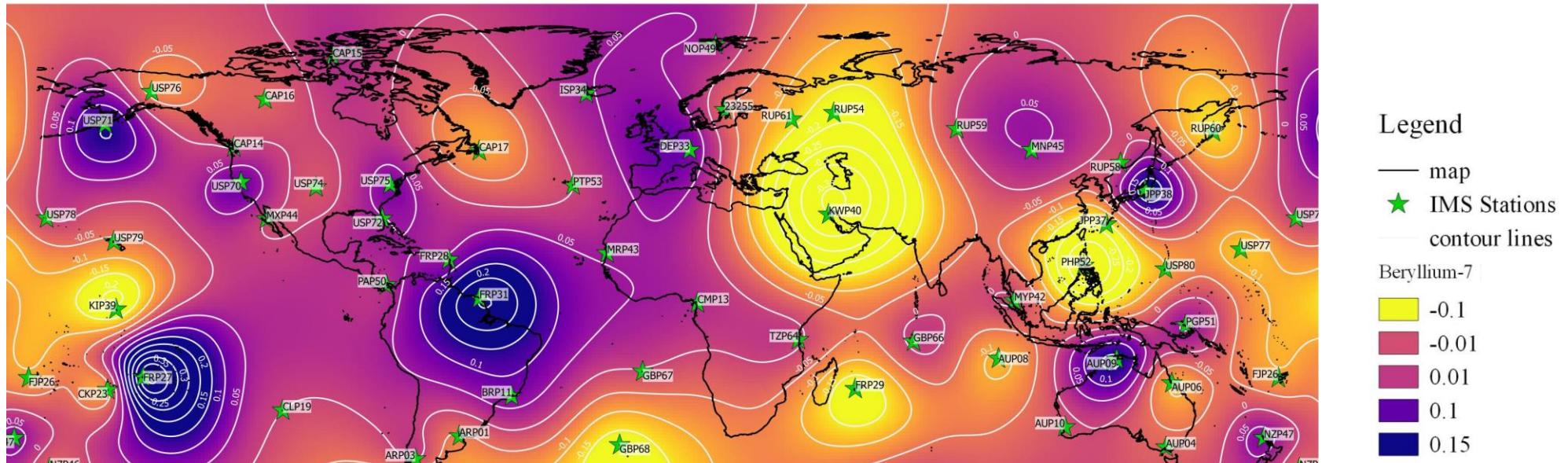


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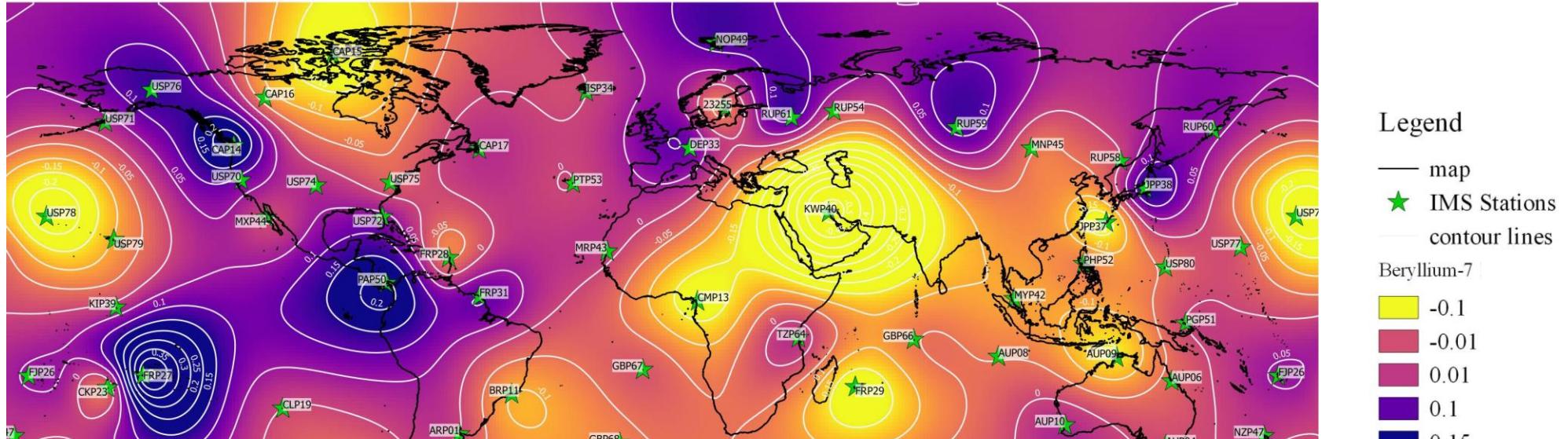
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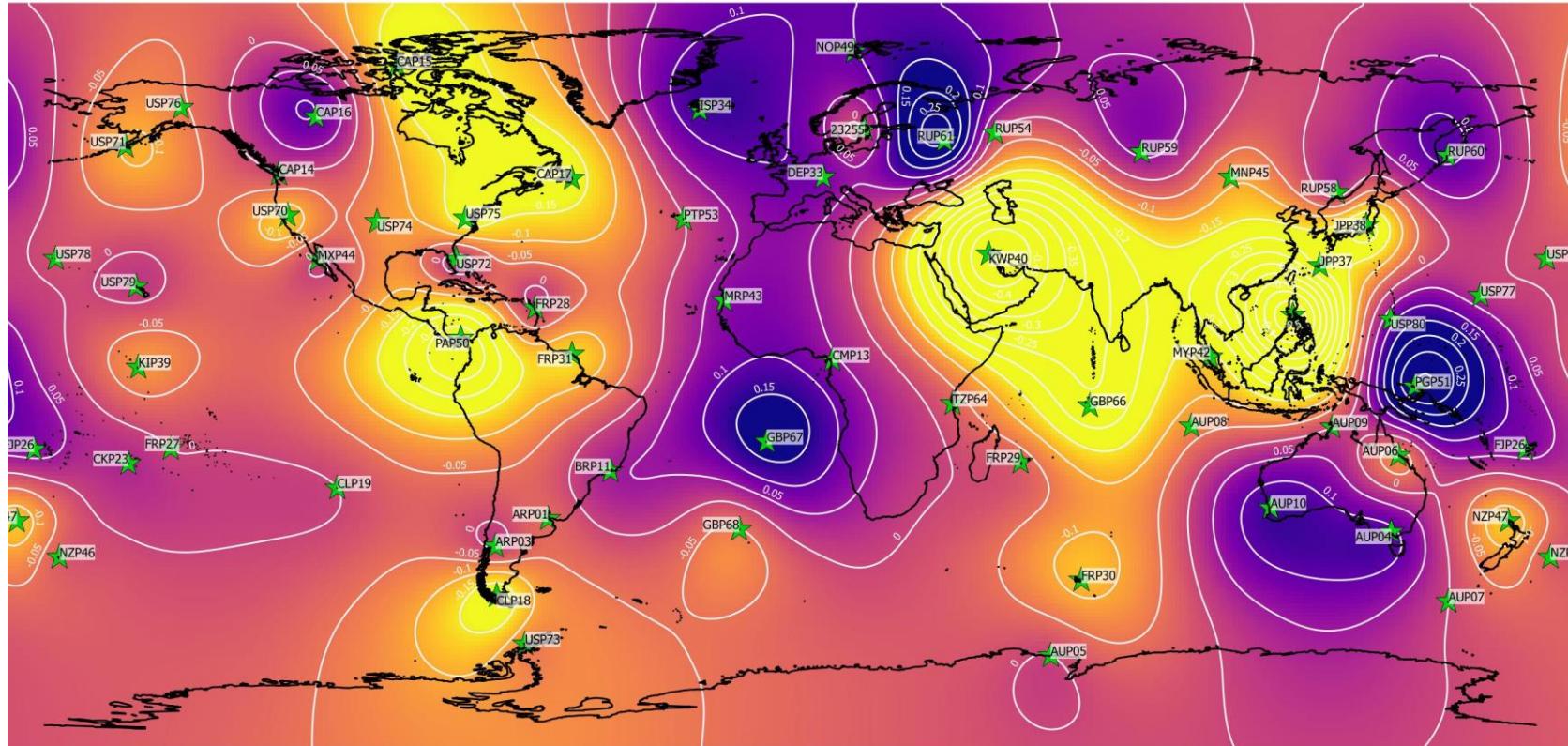
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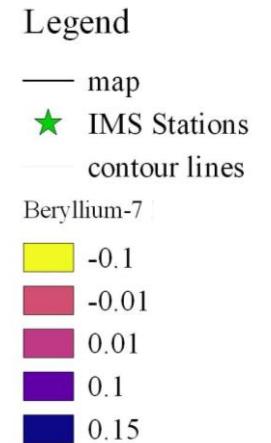
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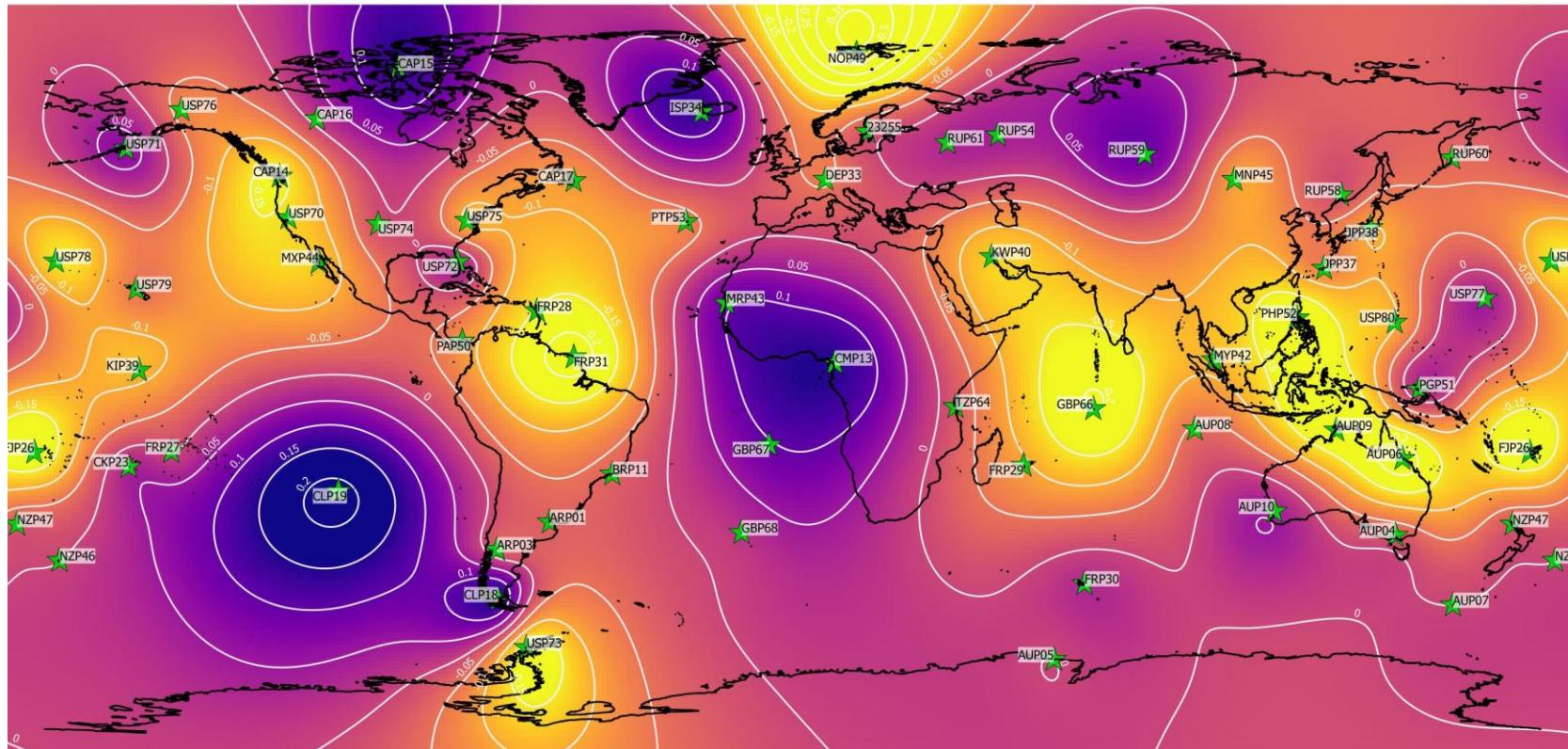


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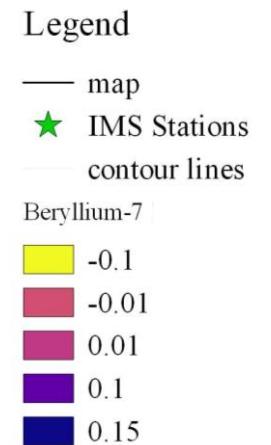


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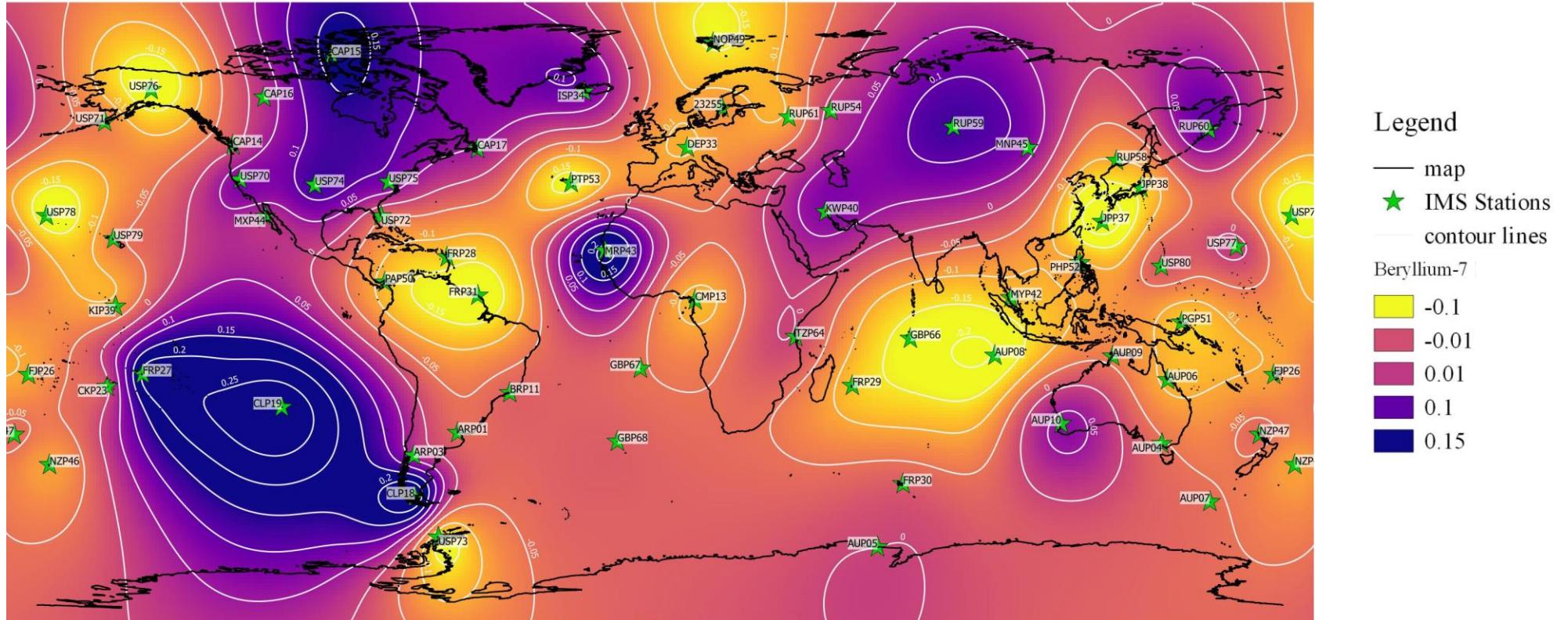


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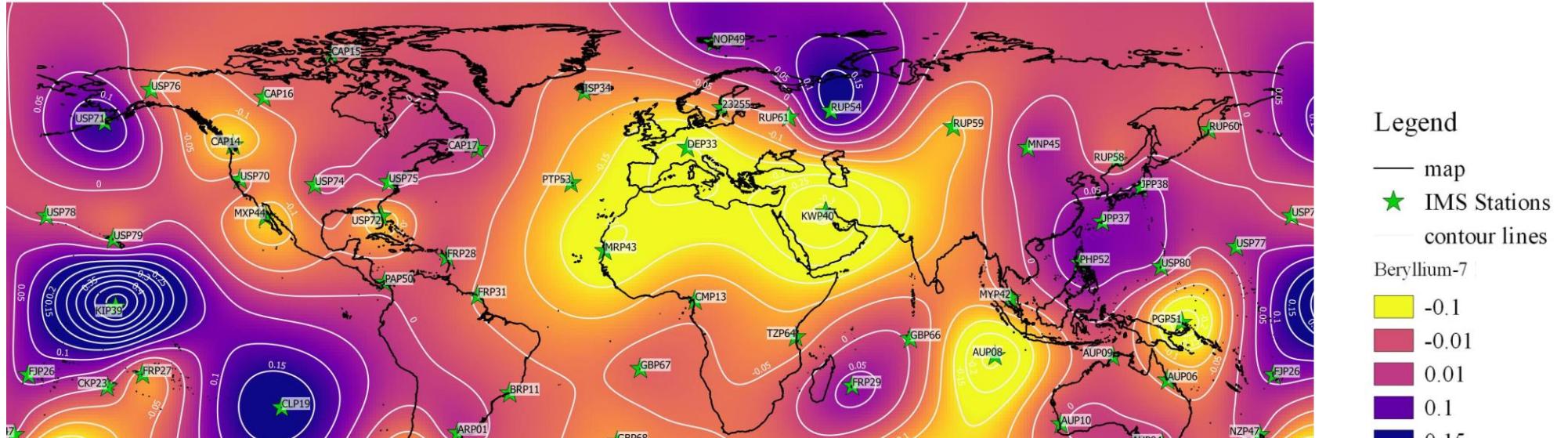
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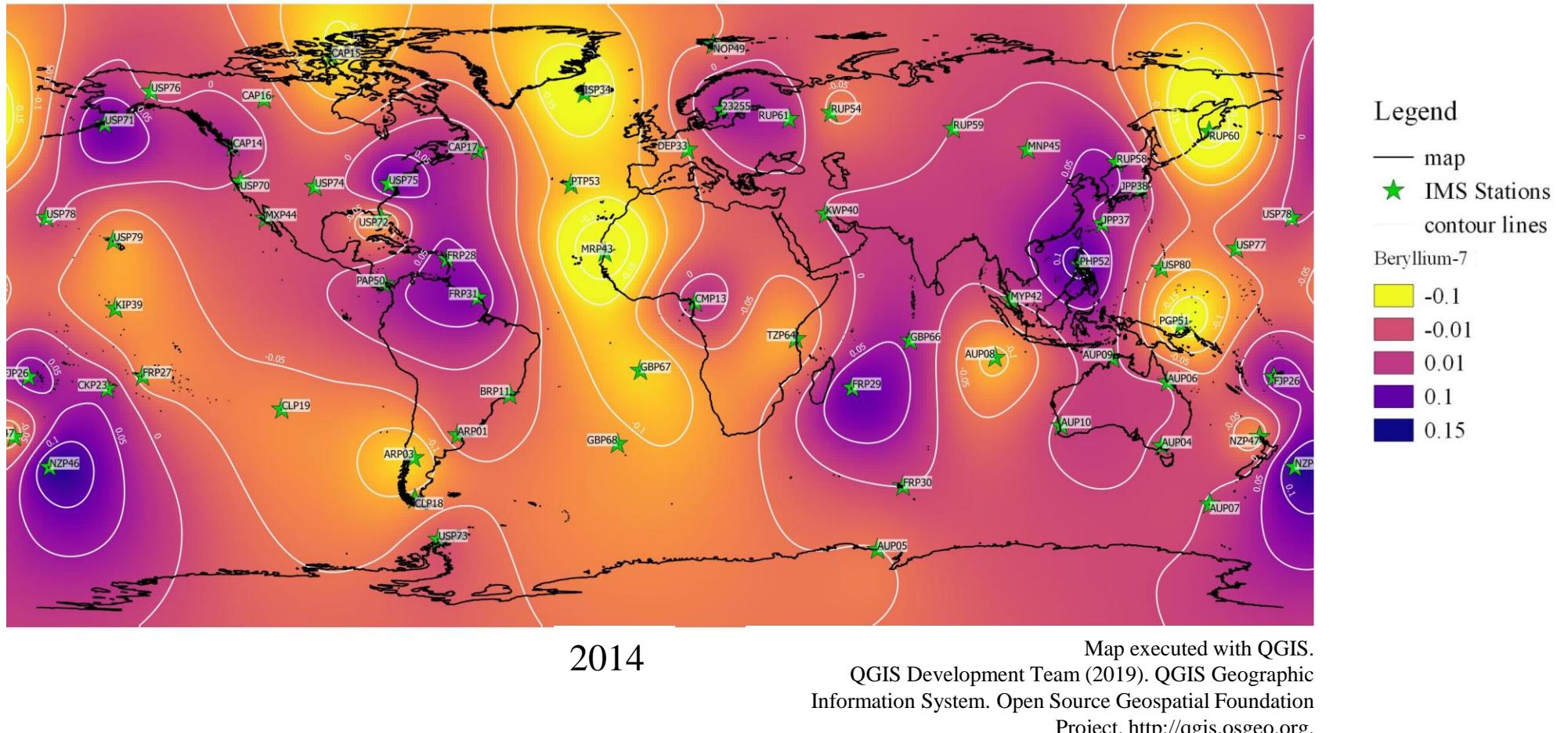
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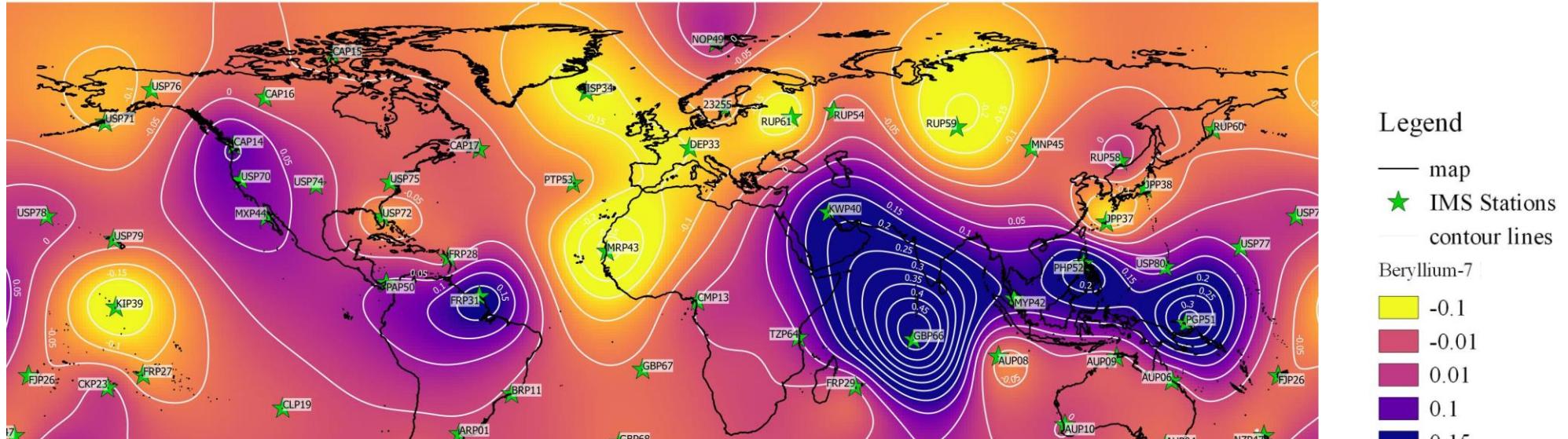
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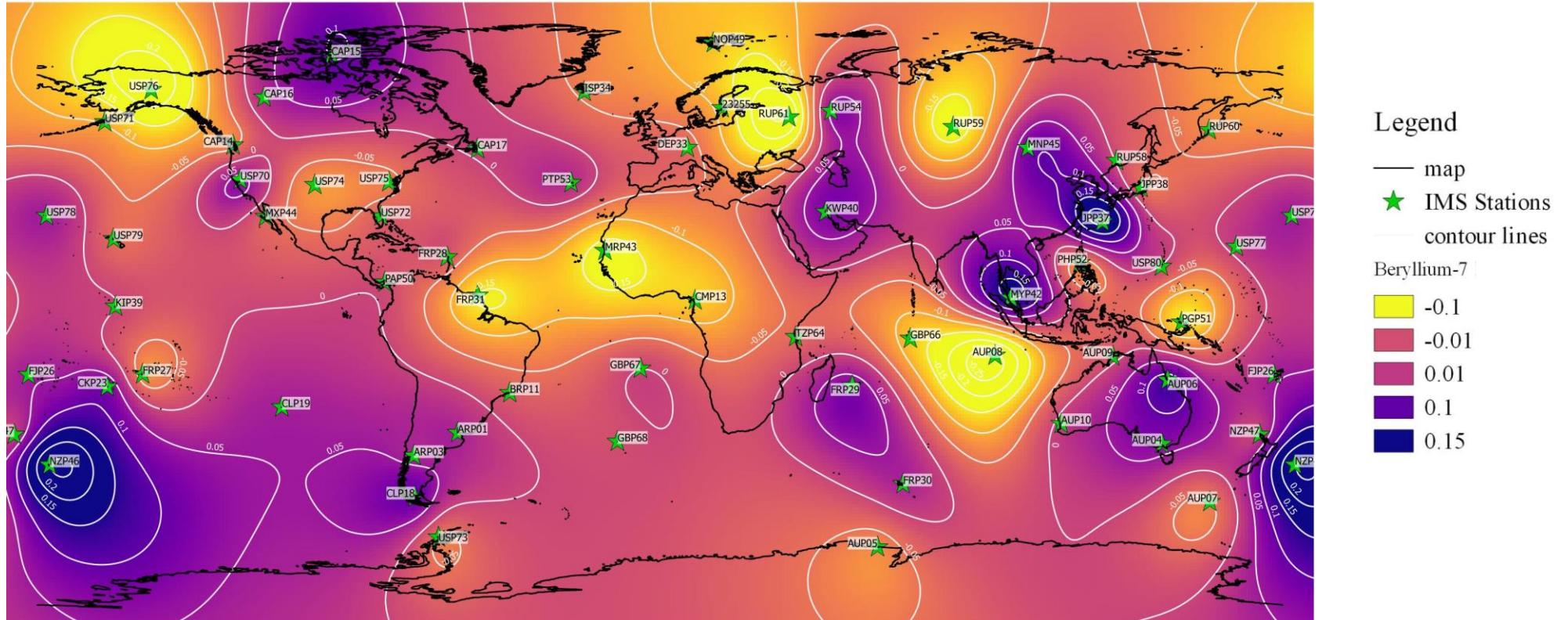
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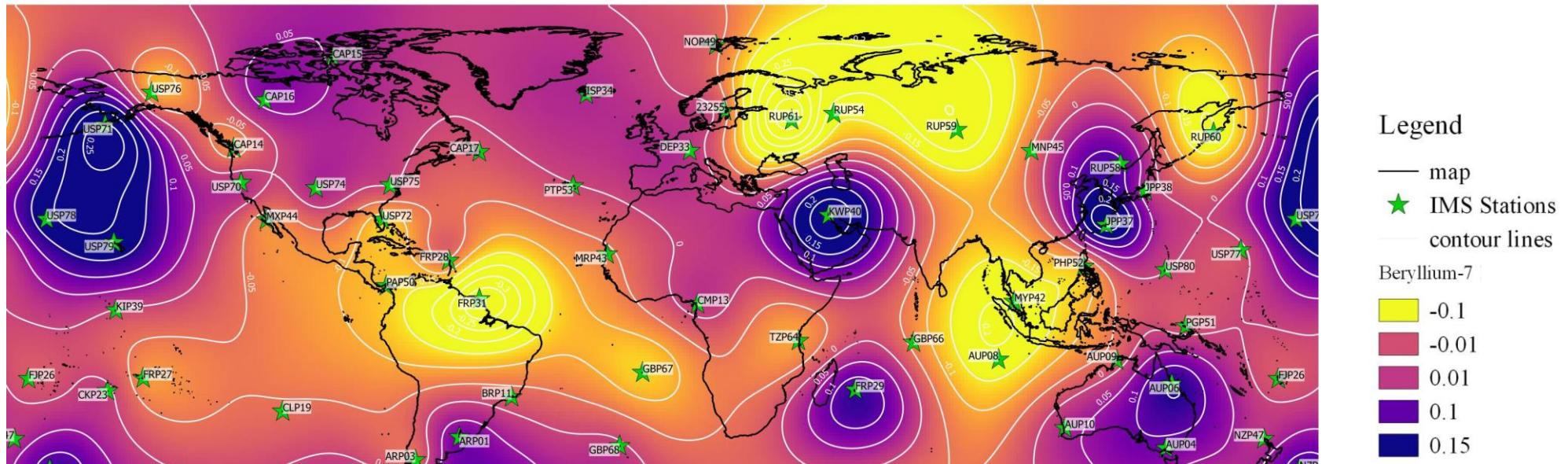
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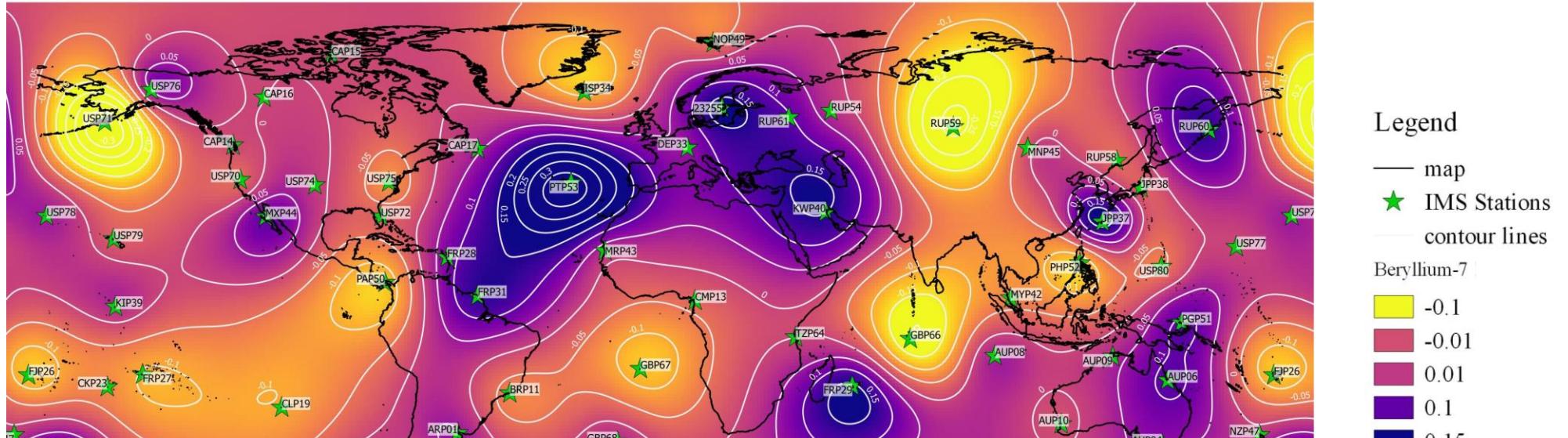
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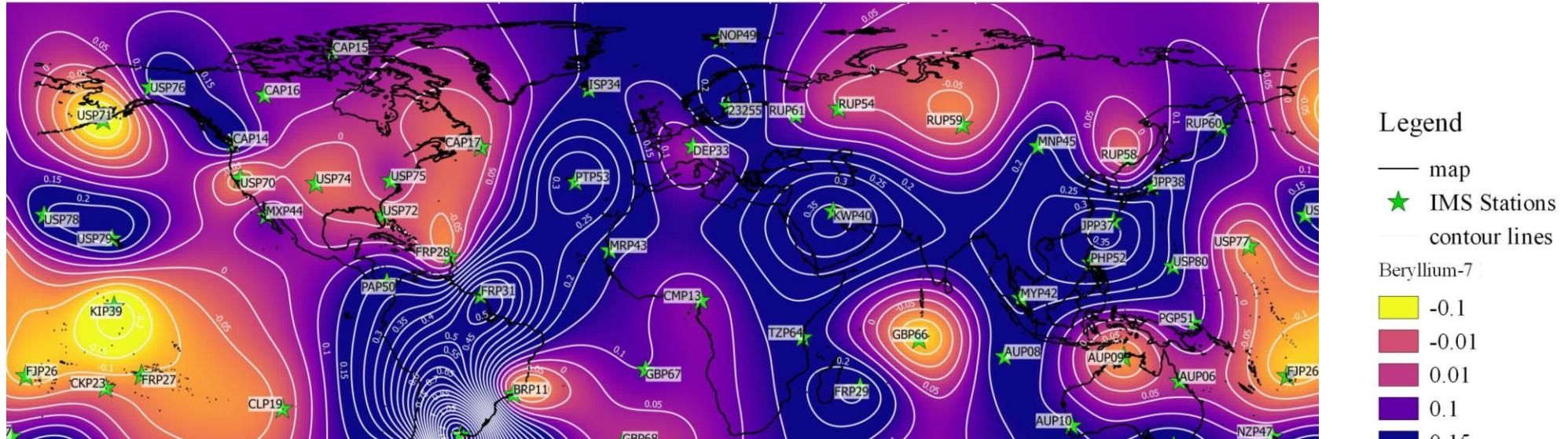
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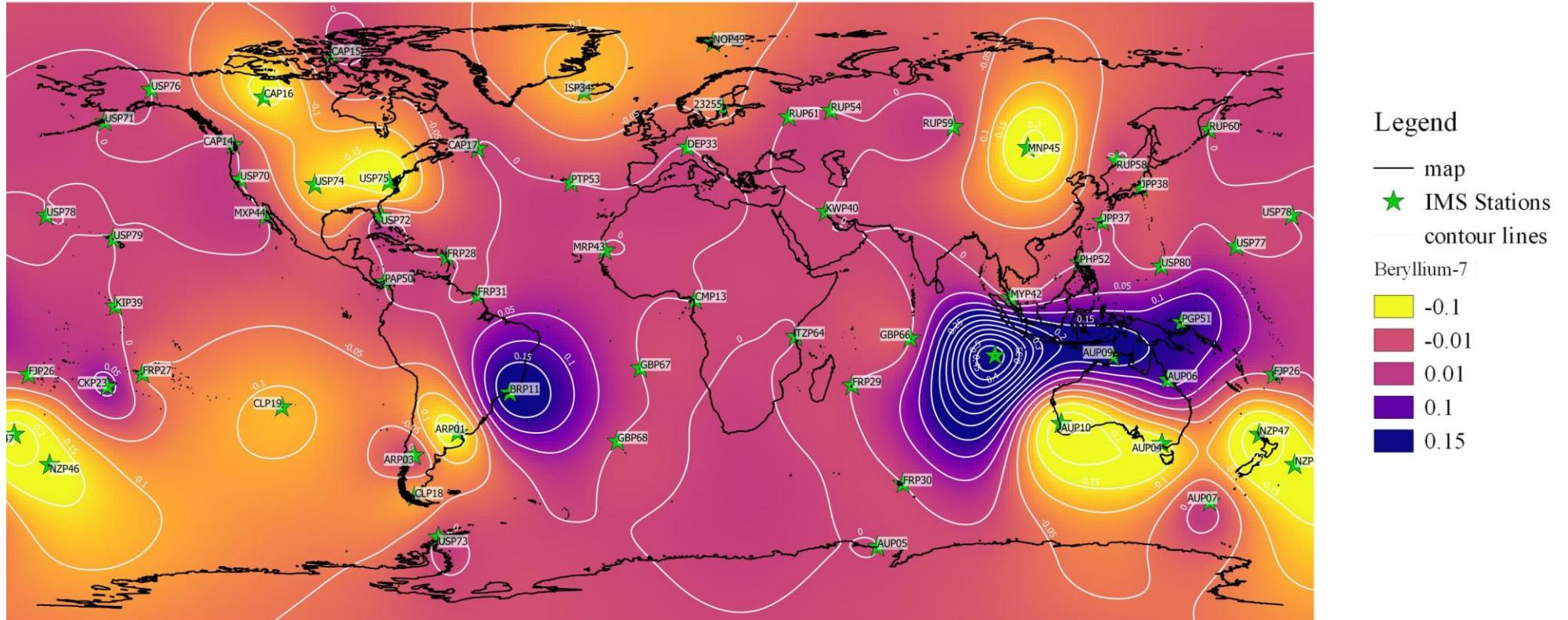
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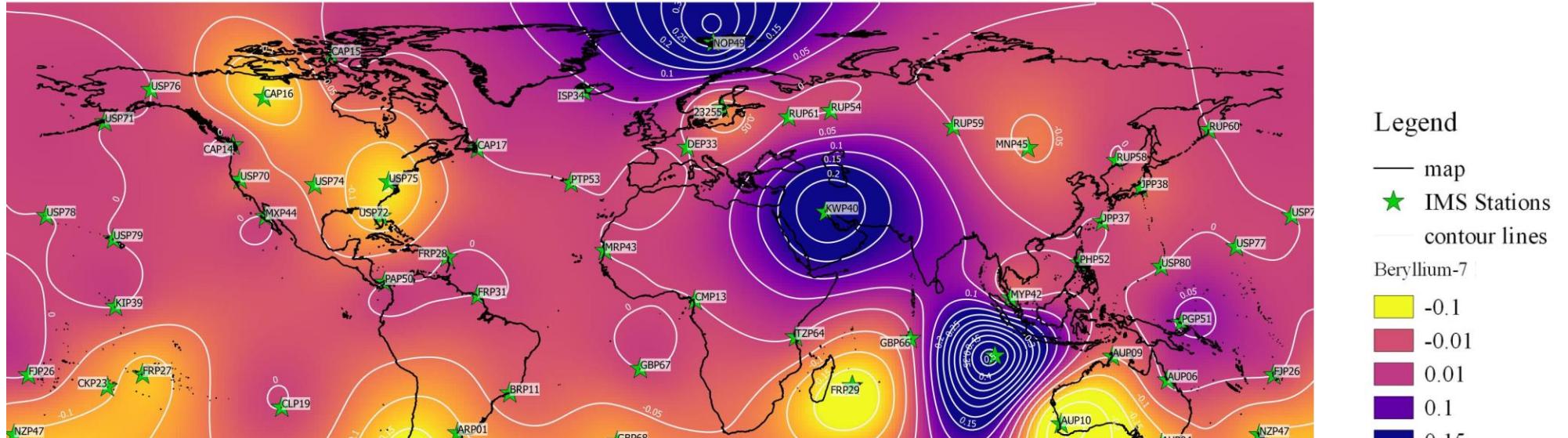
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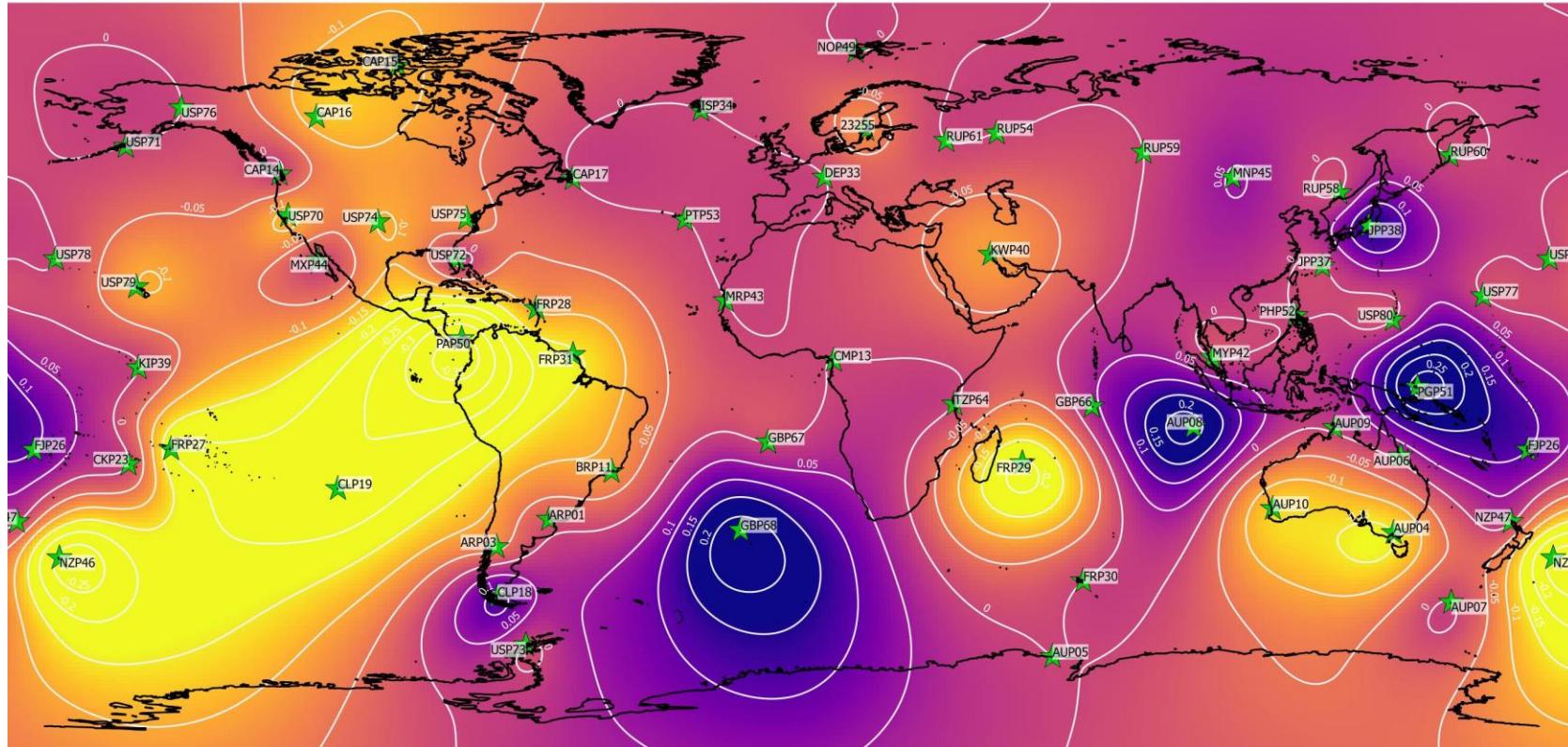
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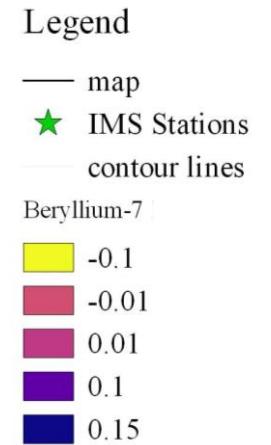
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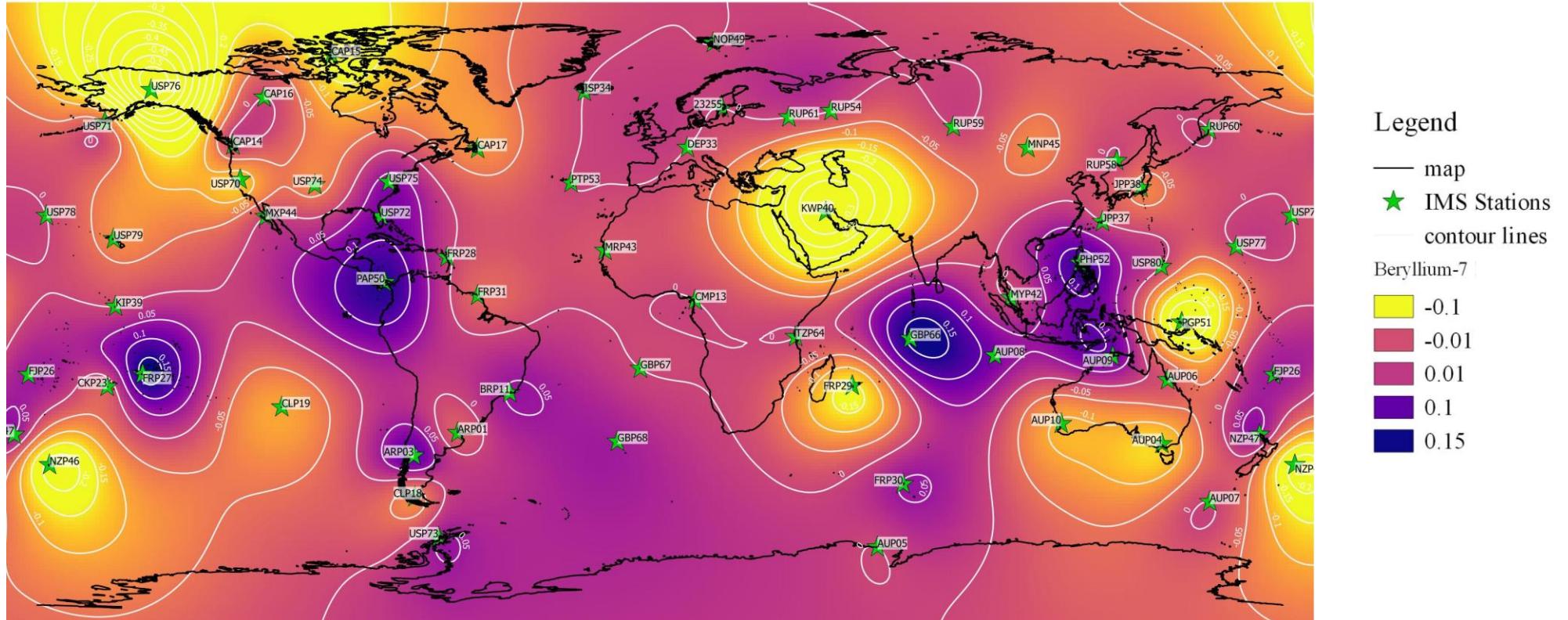


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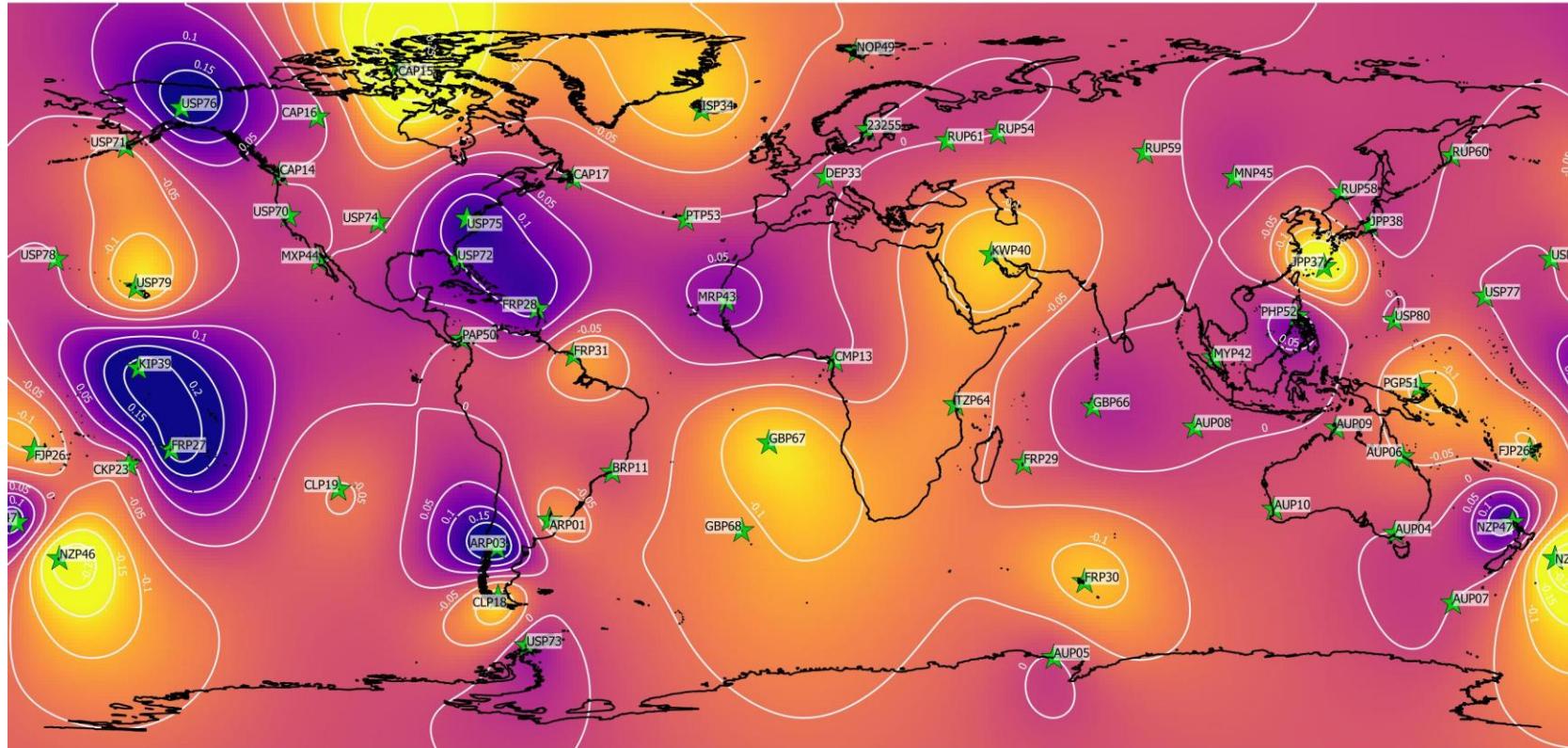
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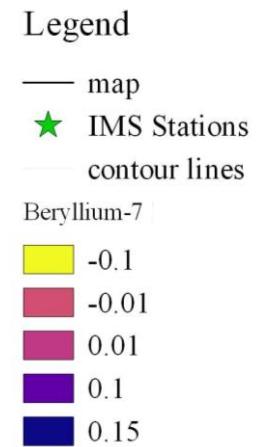
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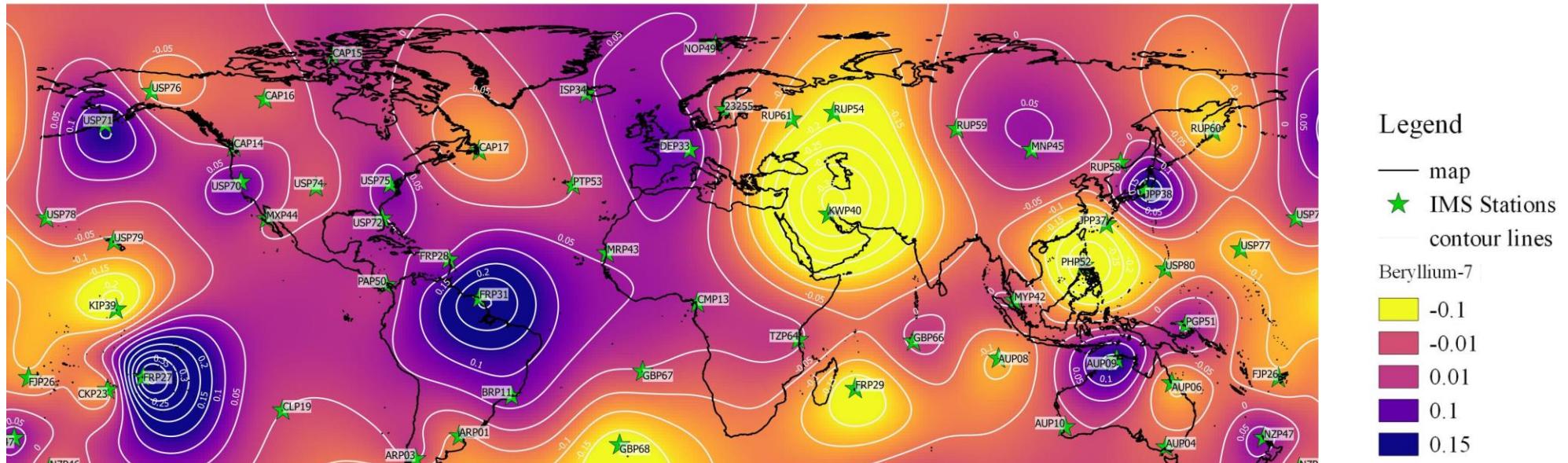


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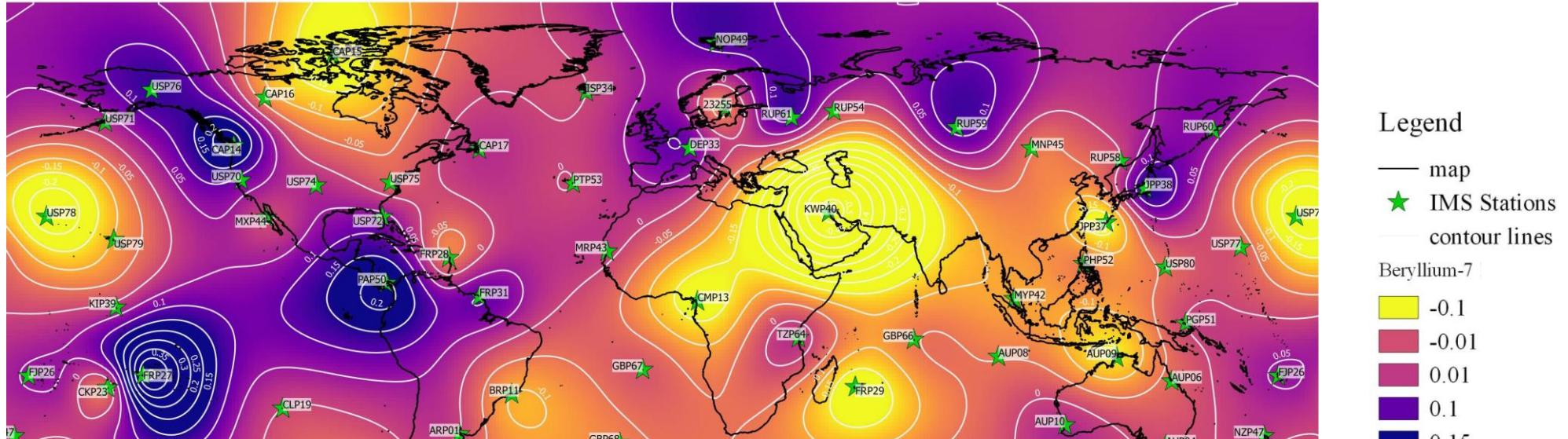
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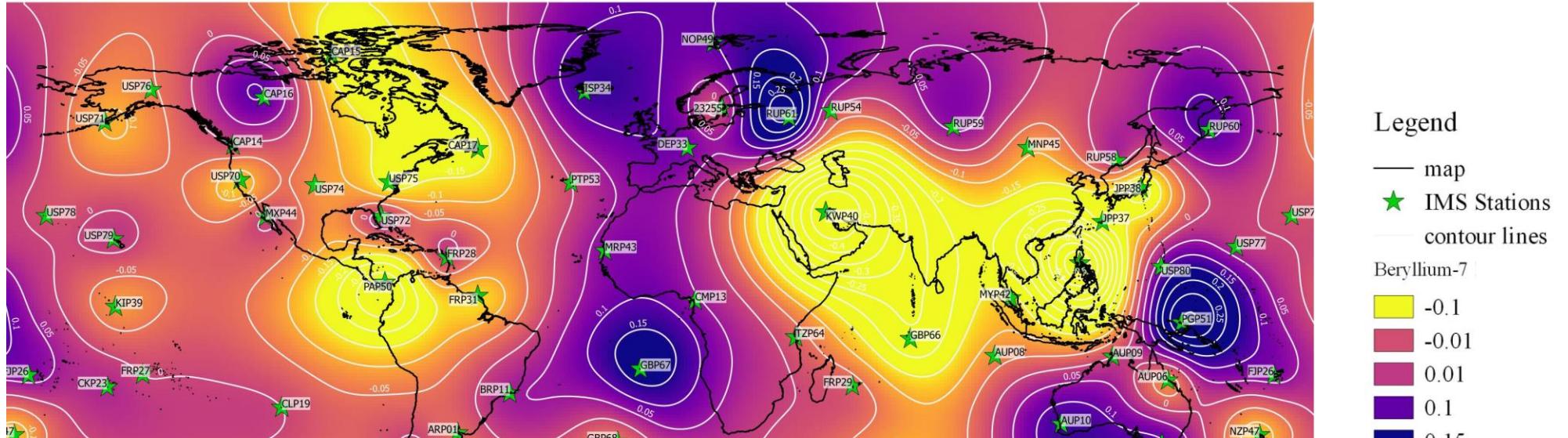
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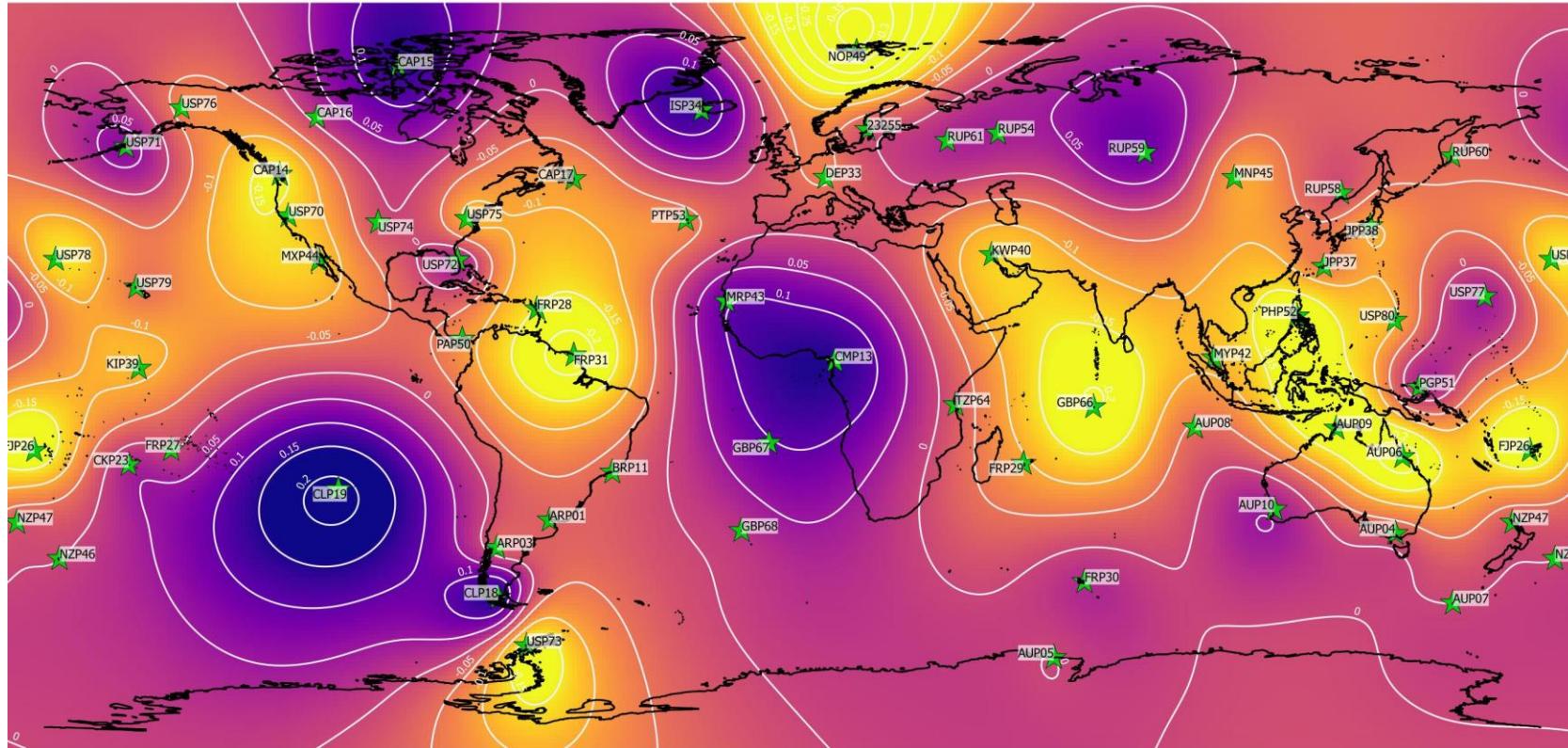
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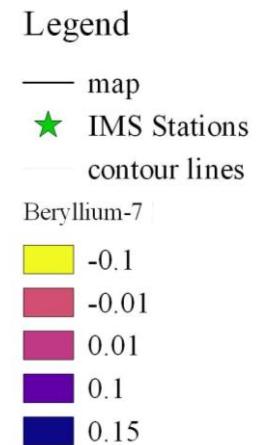
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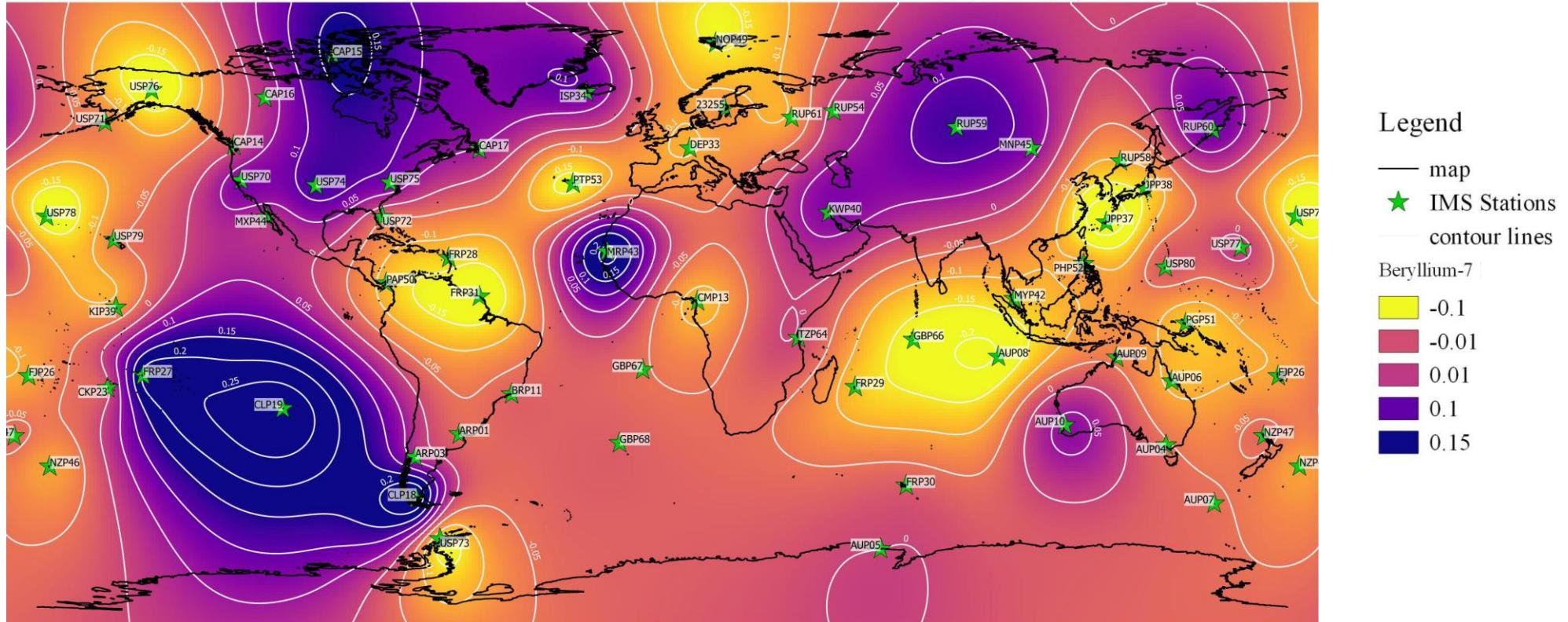


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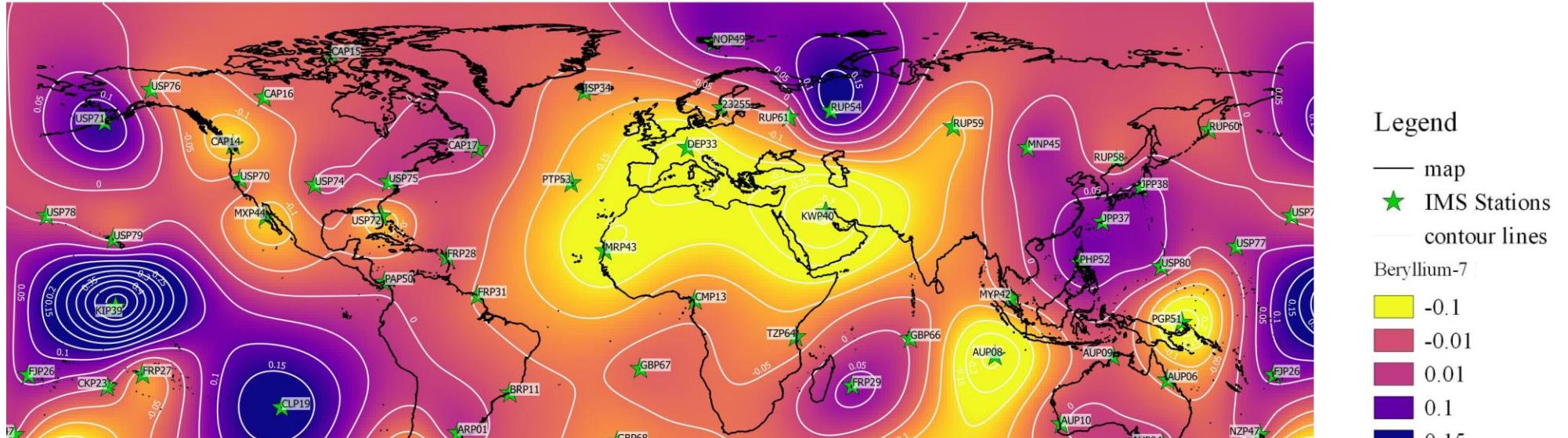
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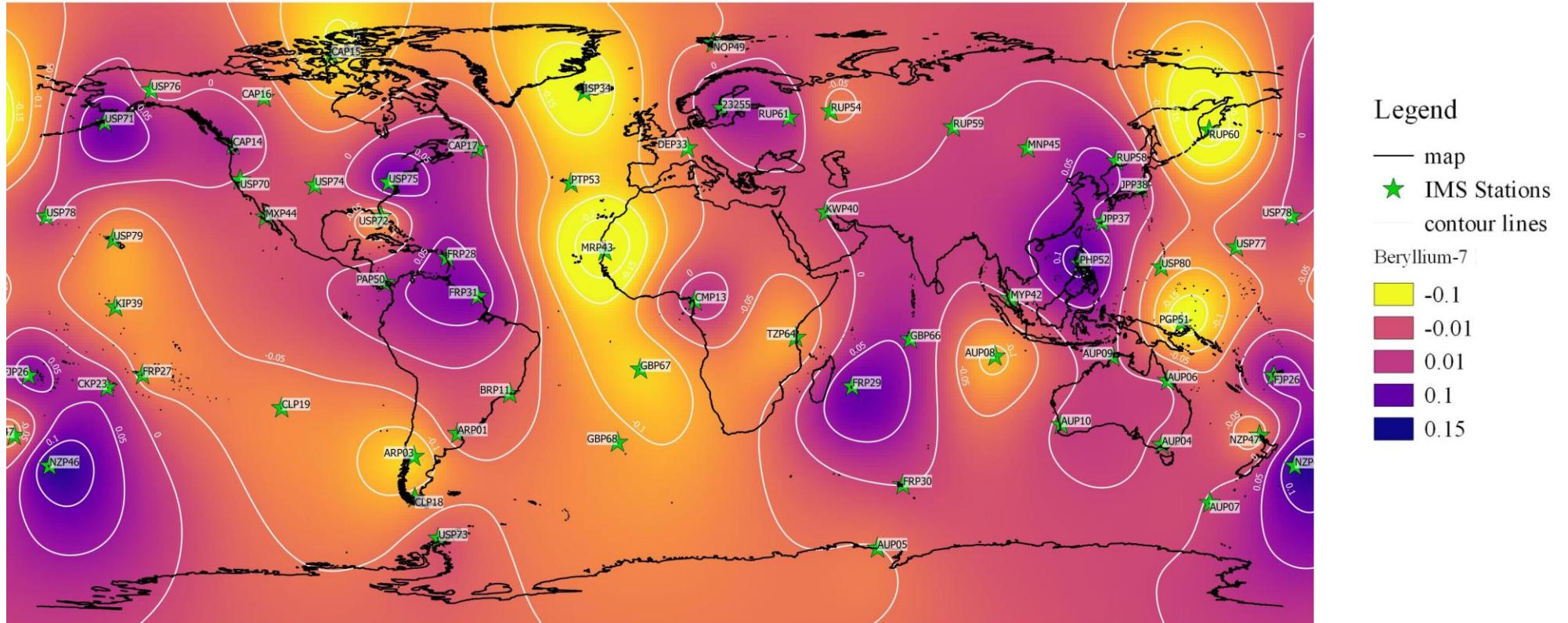
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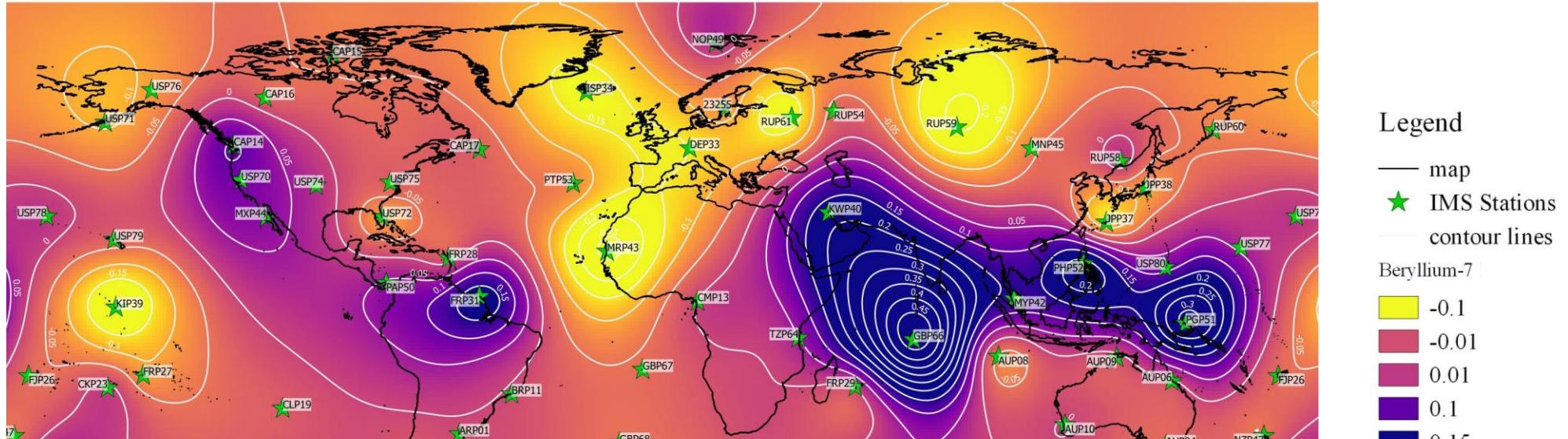
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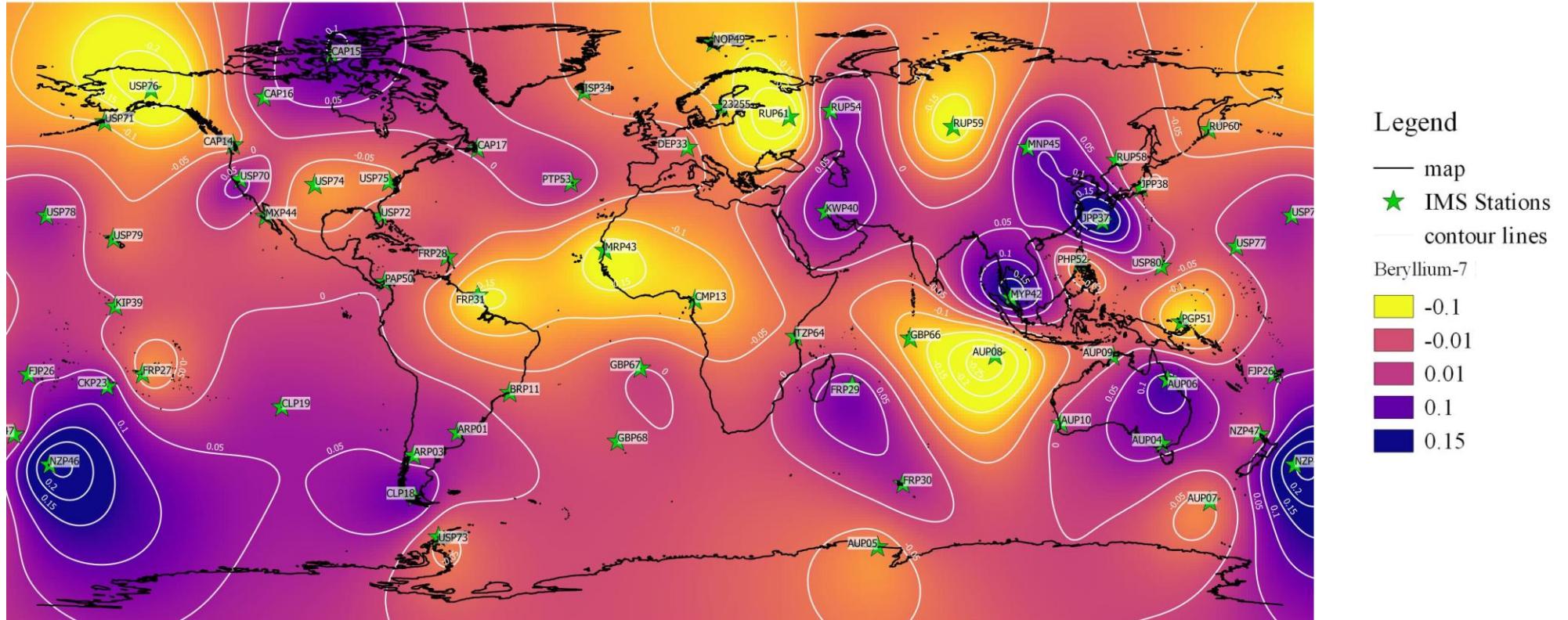
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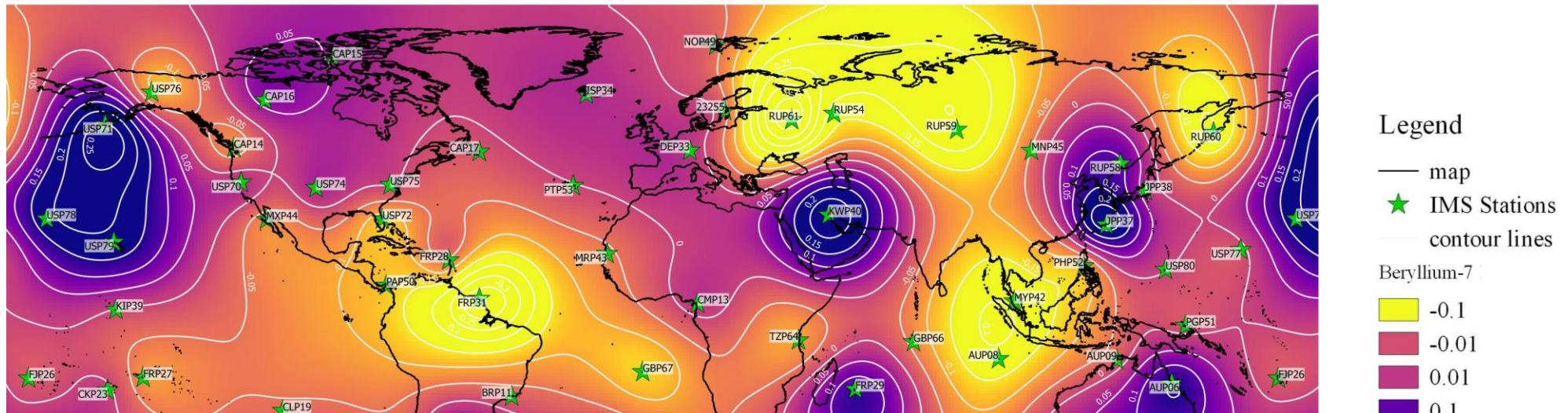
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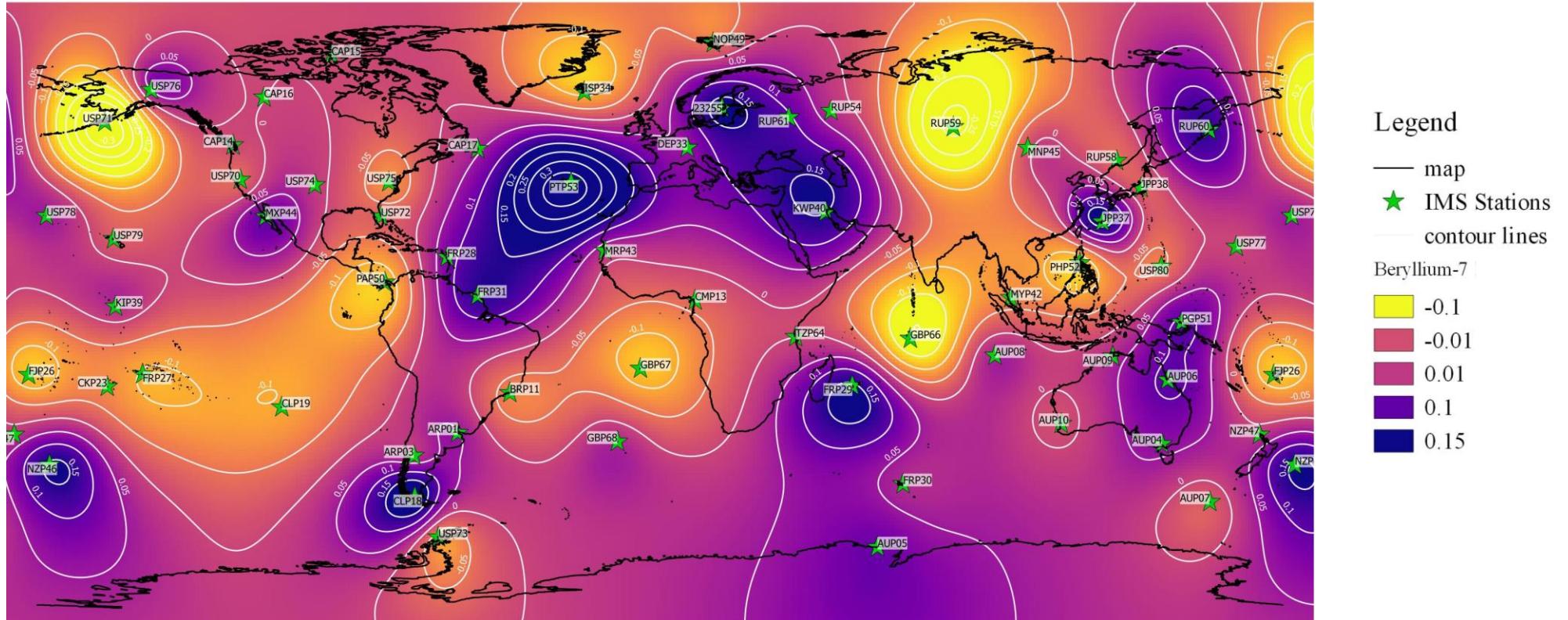
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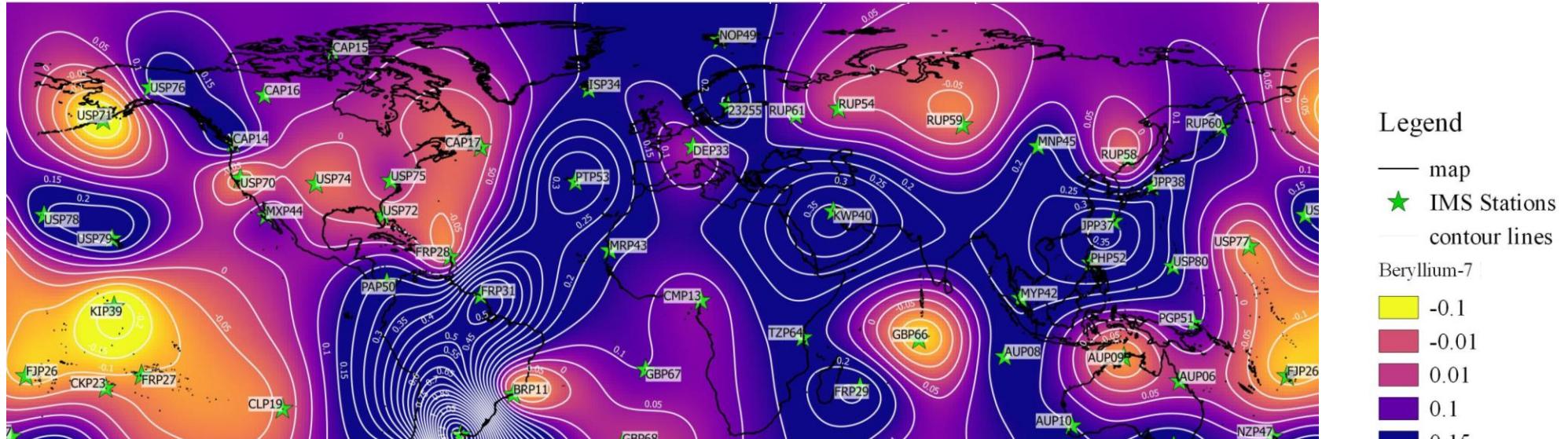
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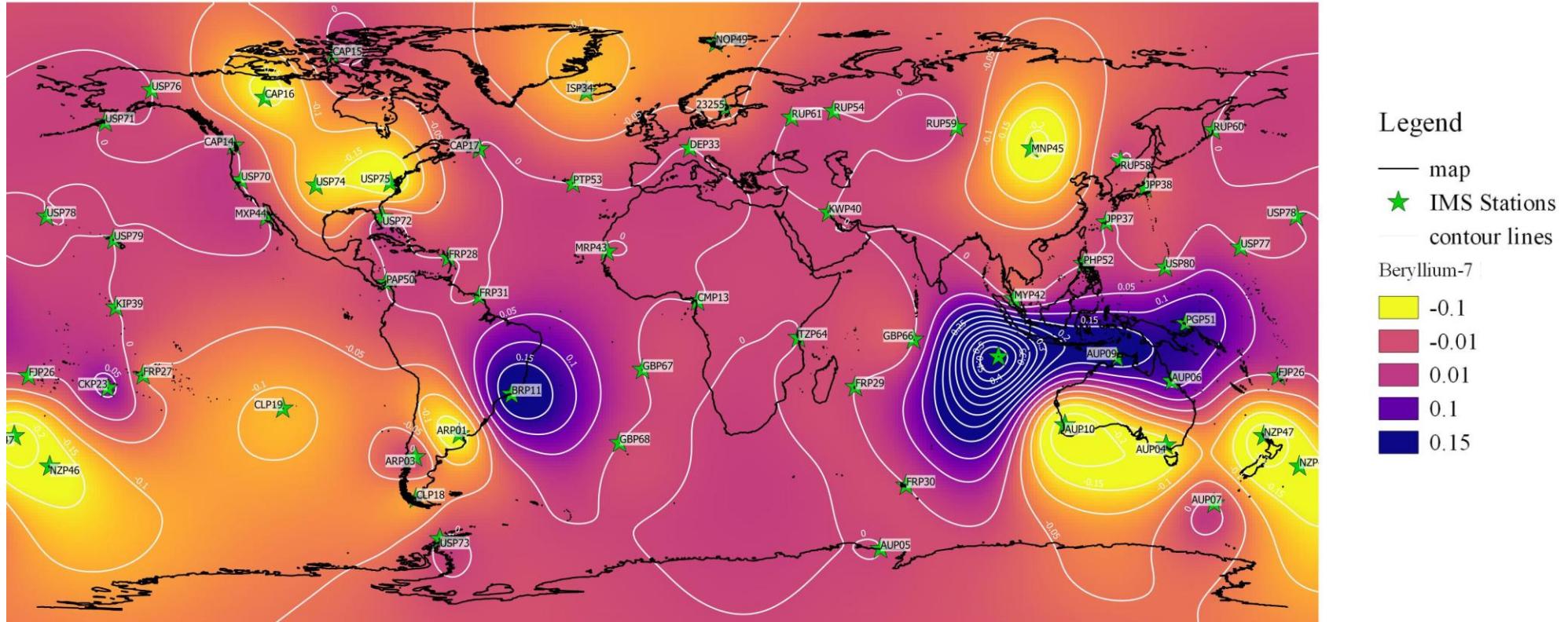
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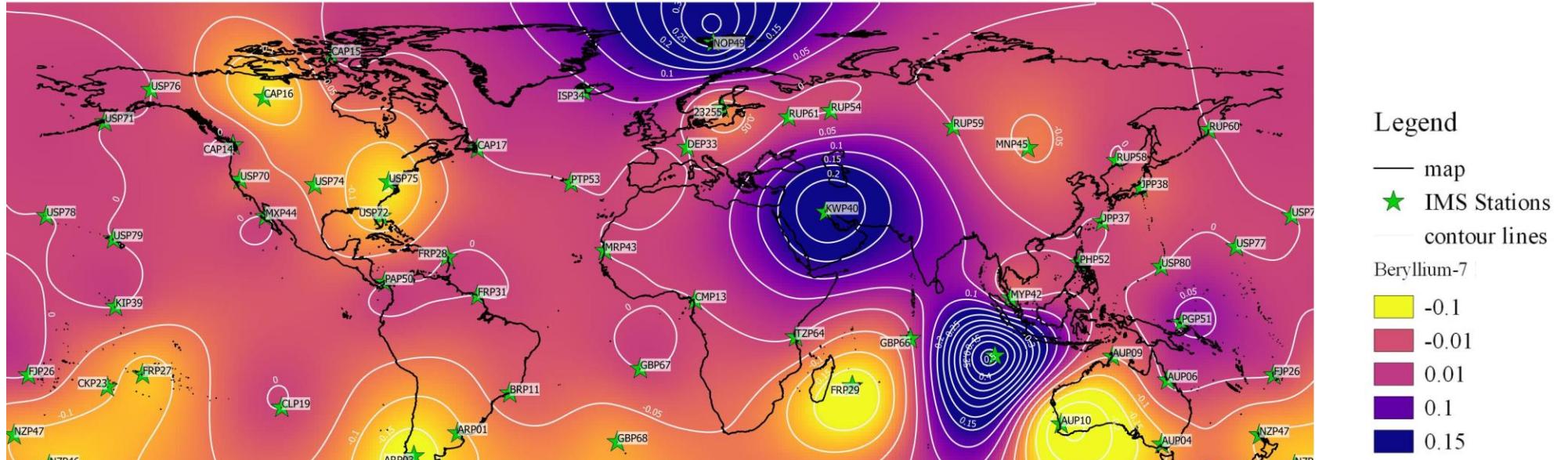
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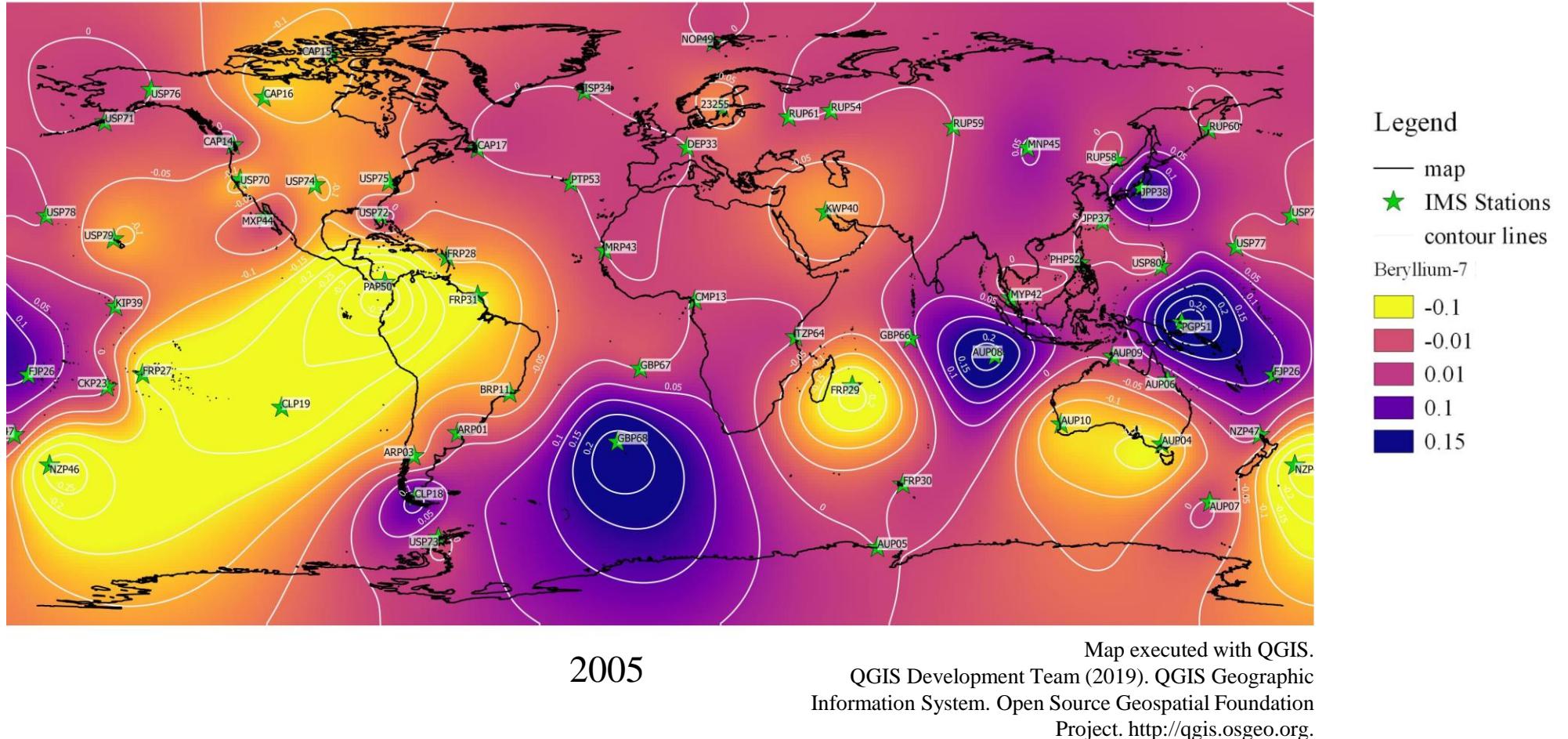
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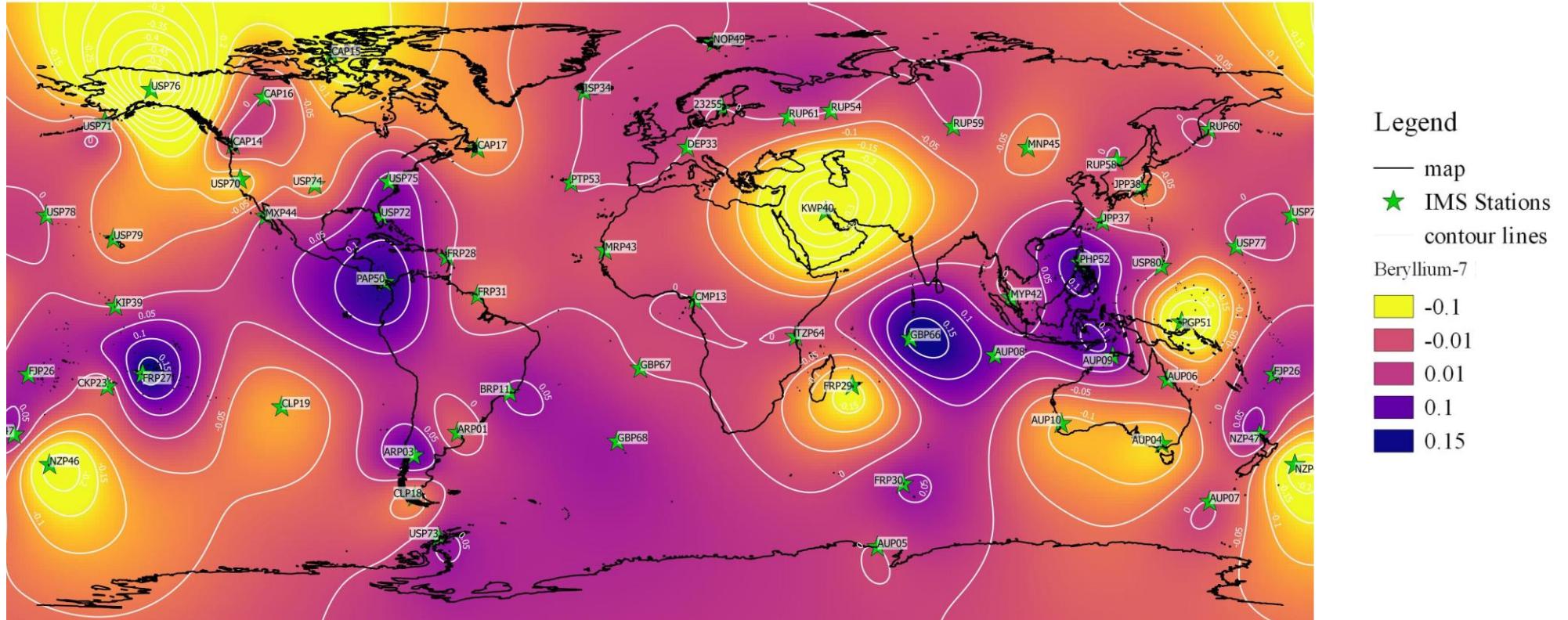
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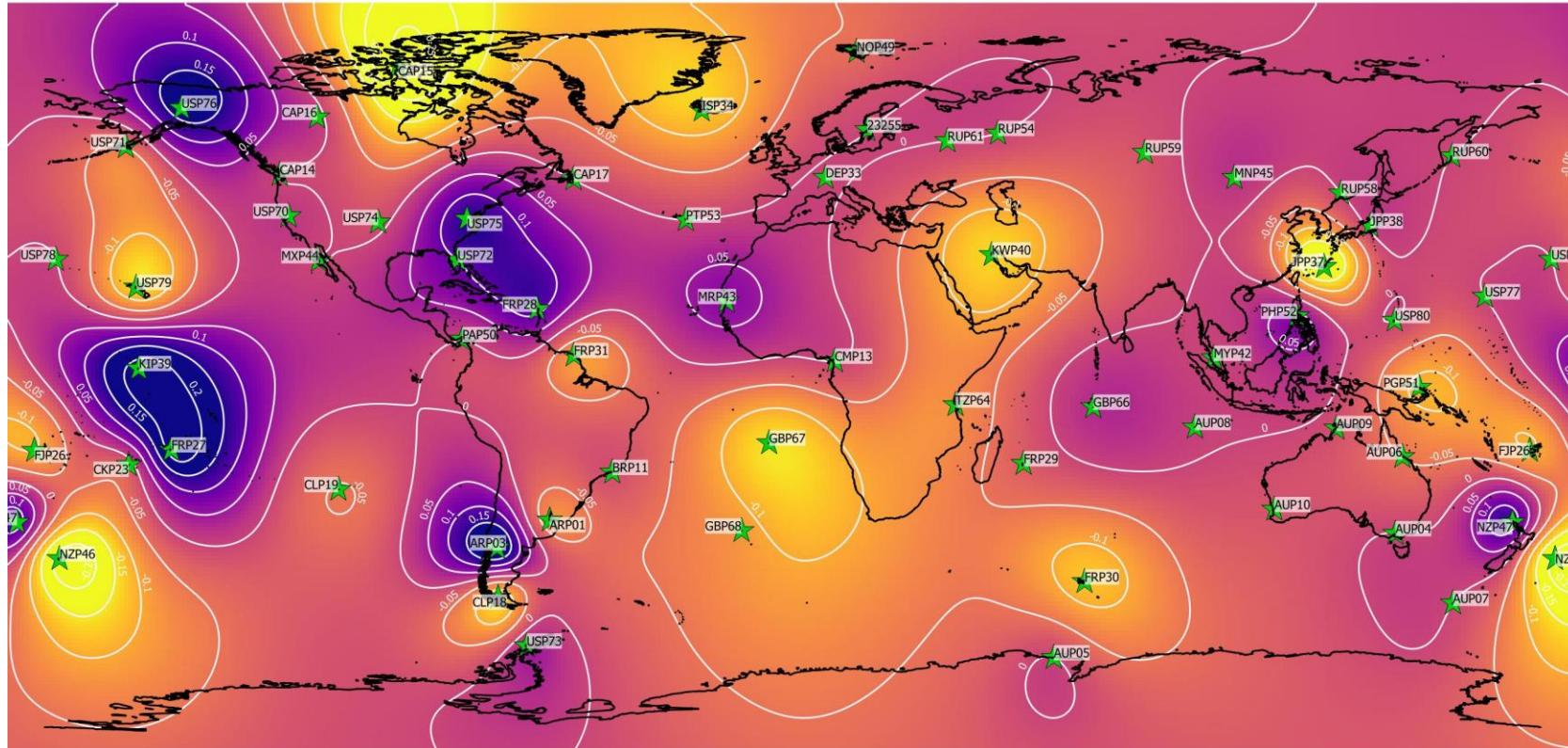
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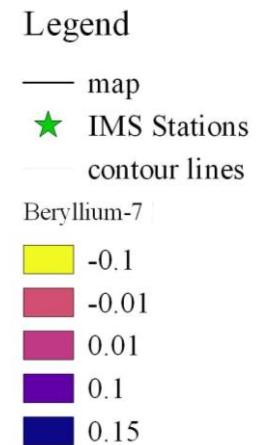
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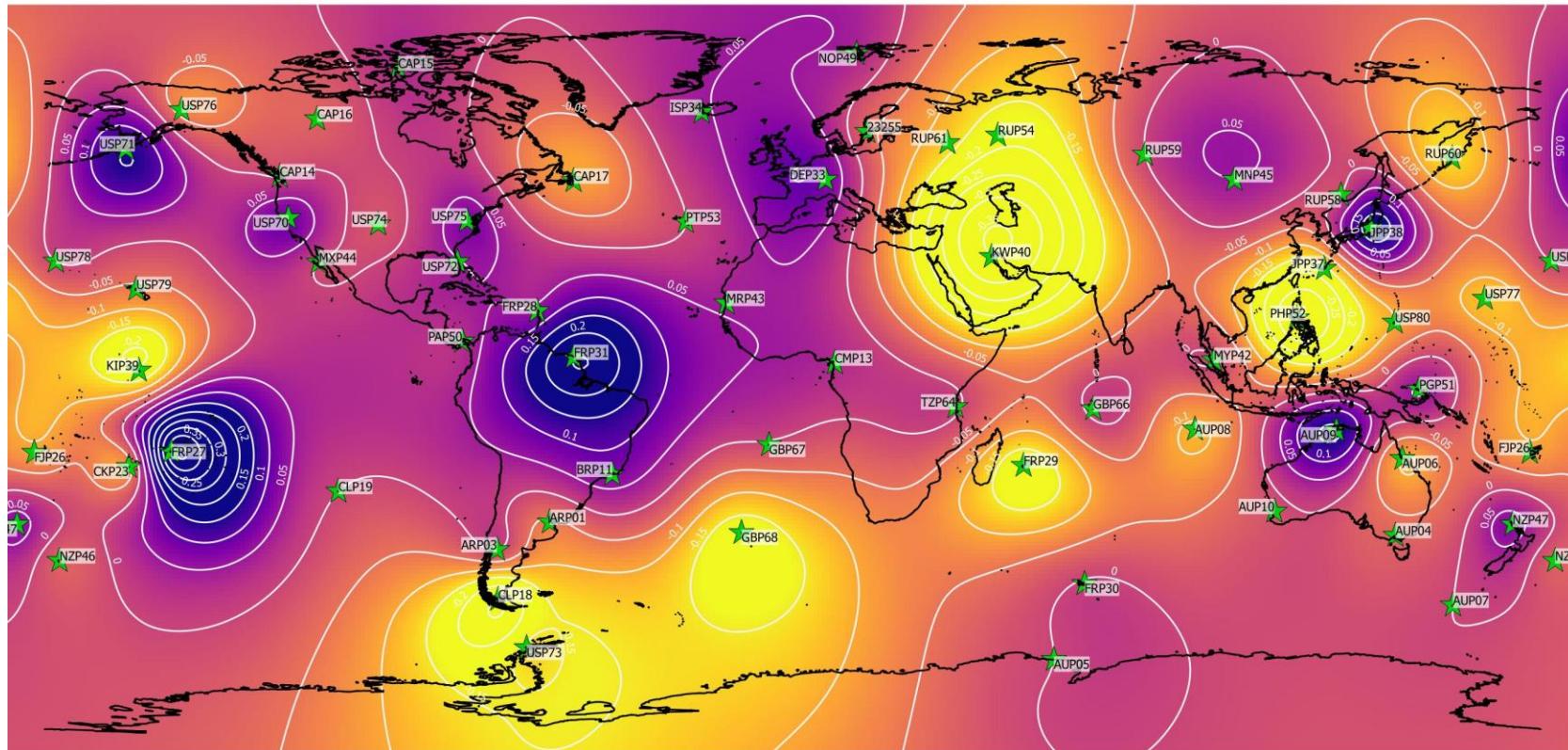


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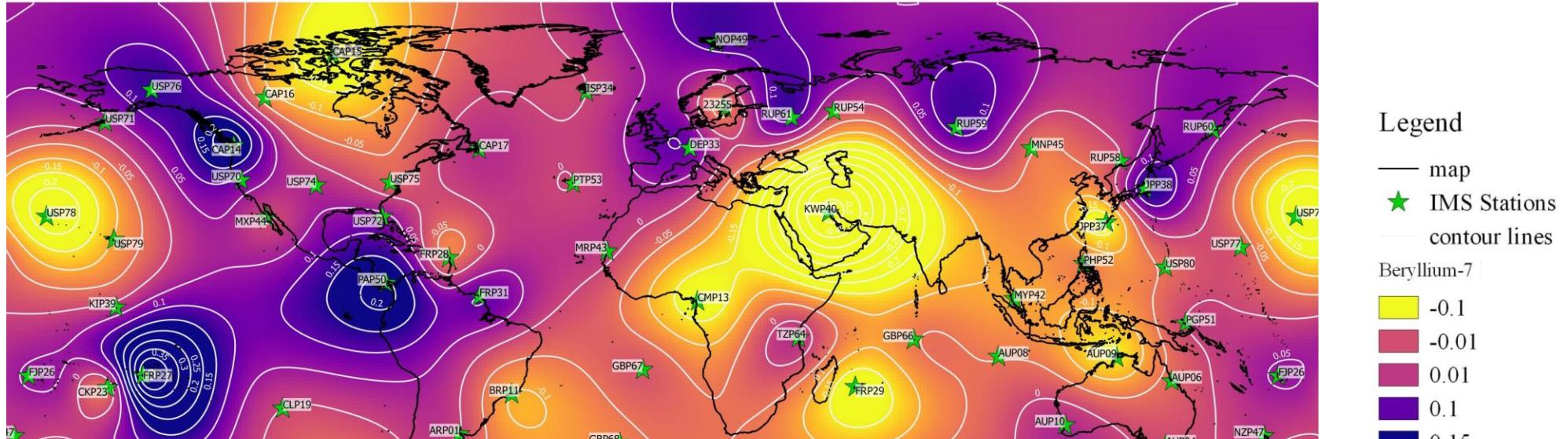
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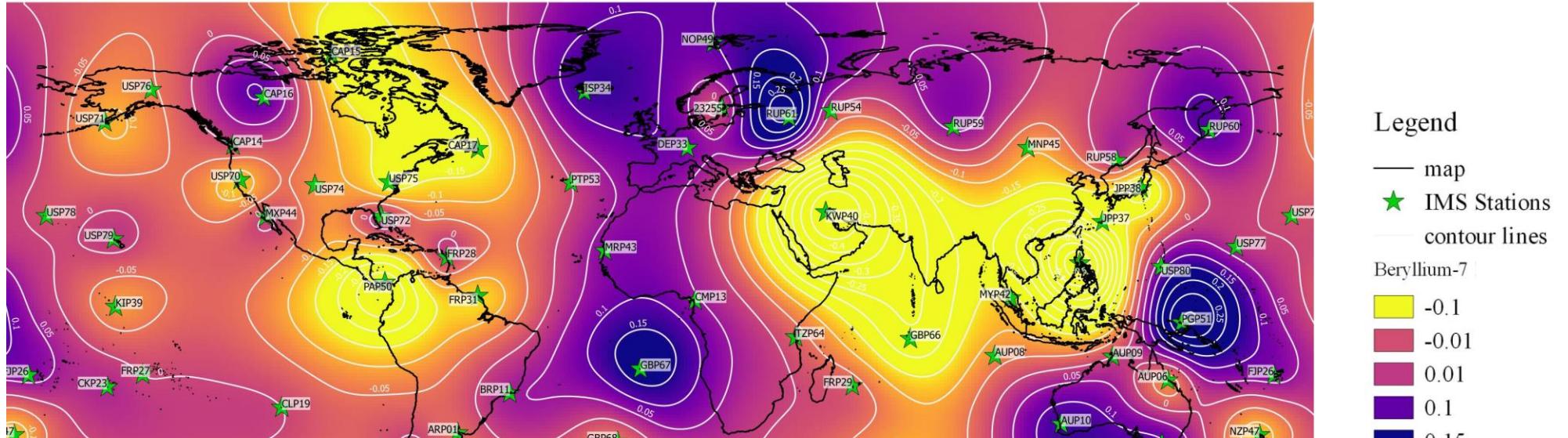
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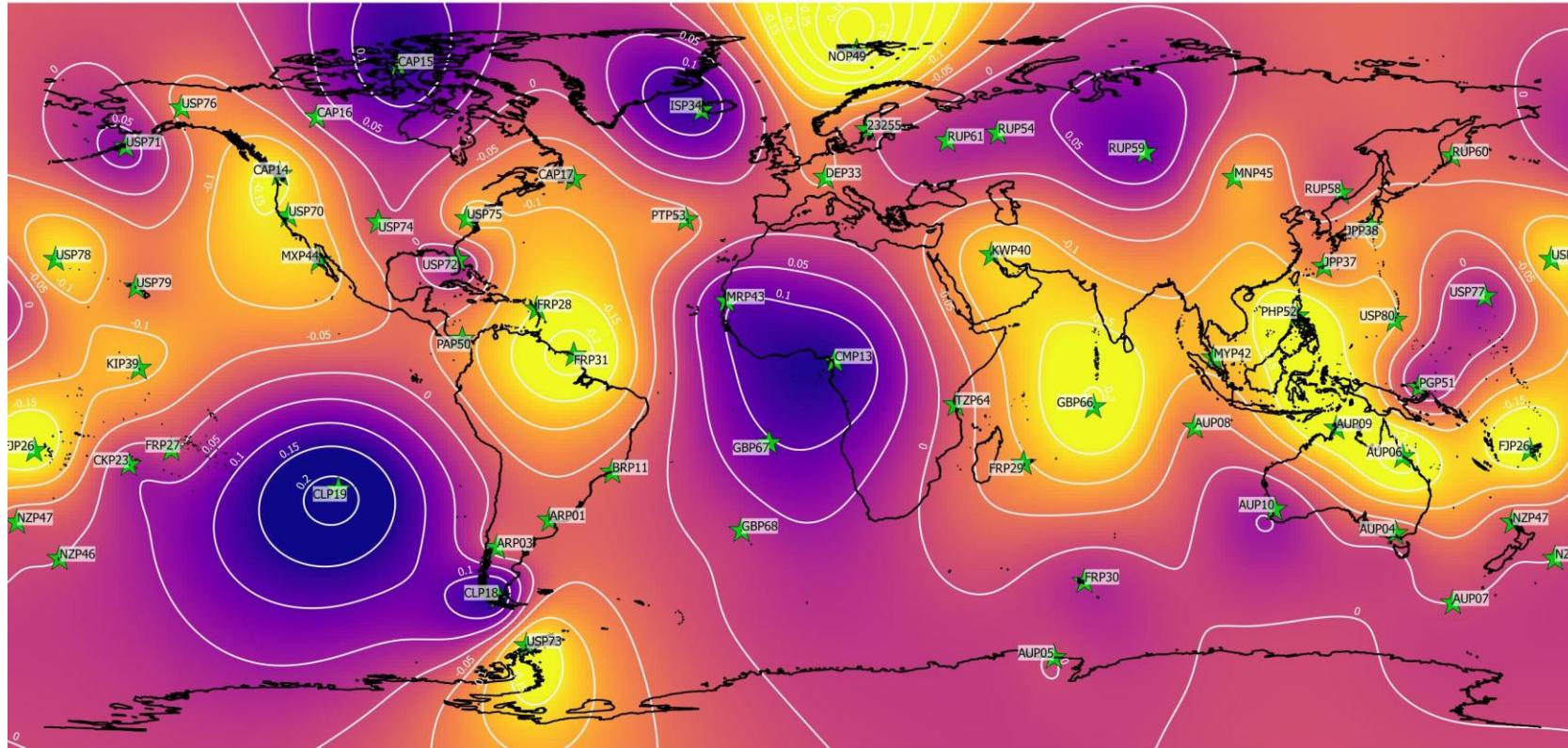
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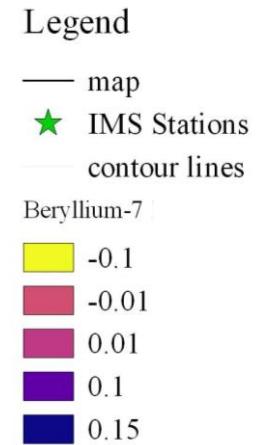
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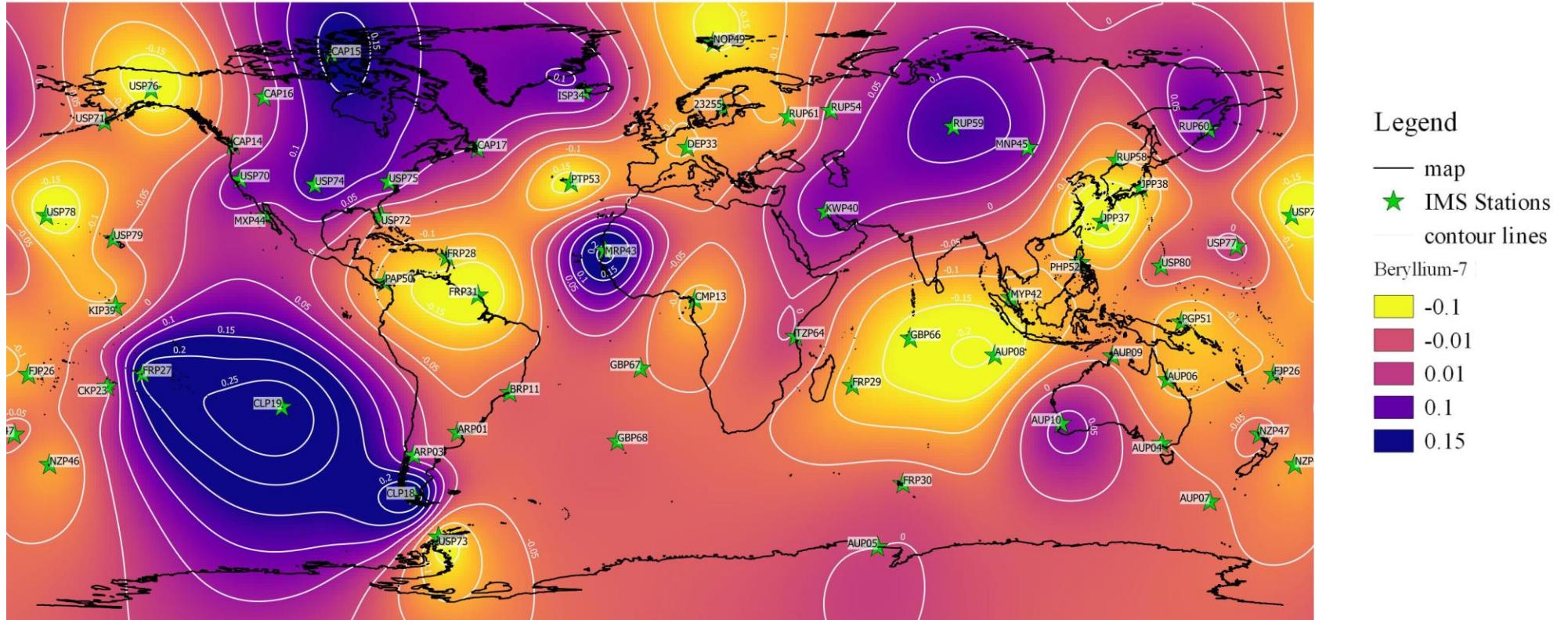


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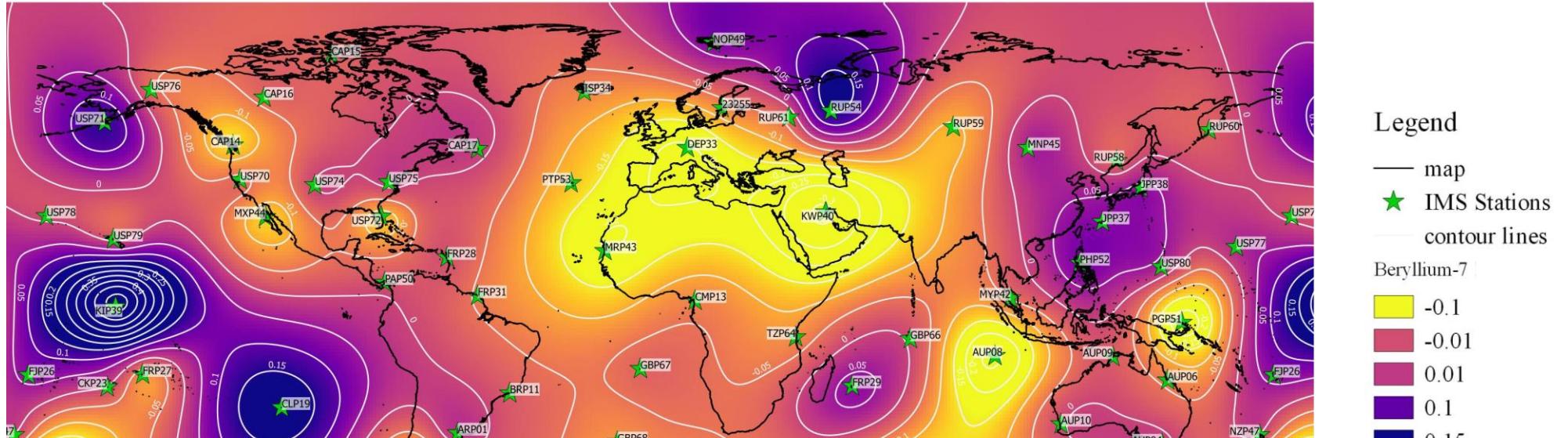
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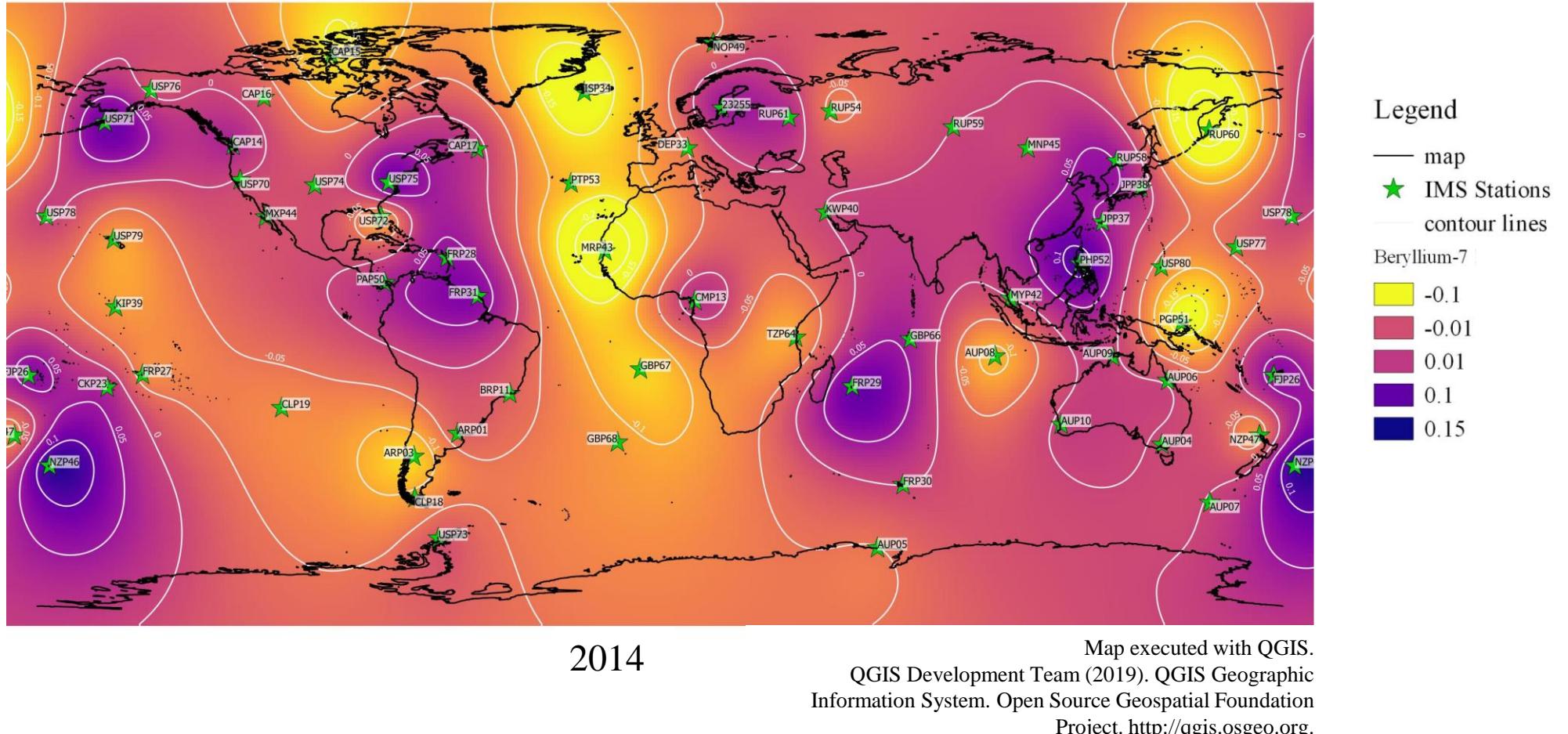
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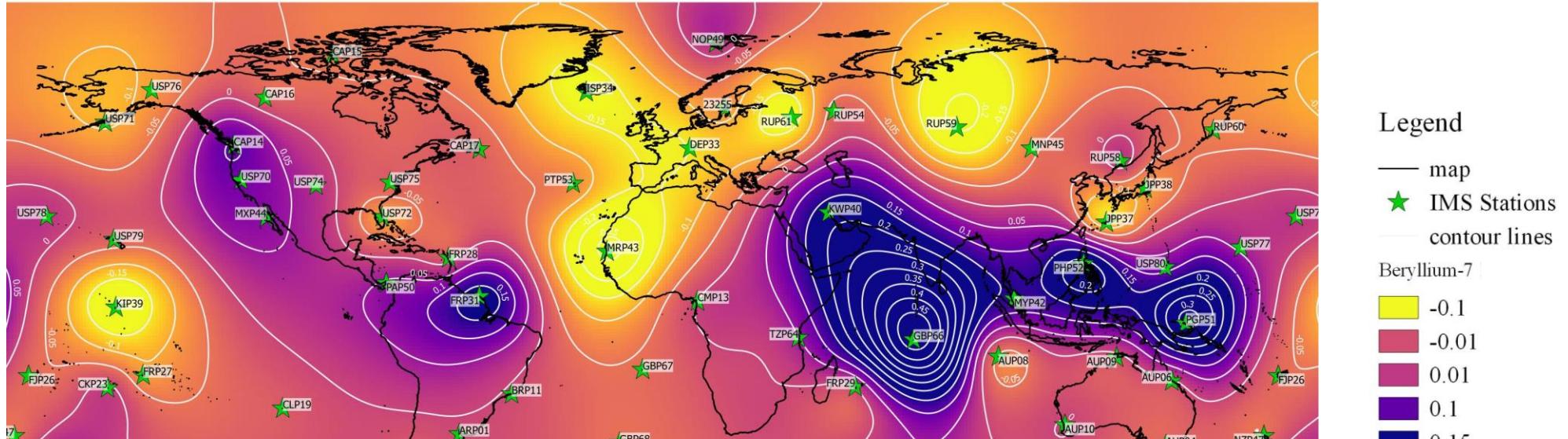
2013

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

## $^{7}\text{Be}$ normalized trend interpolated into a global map



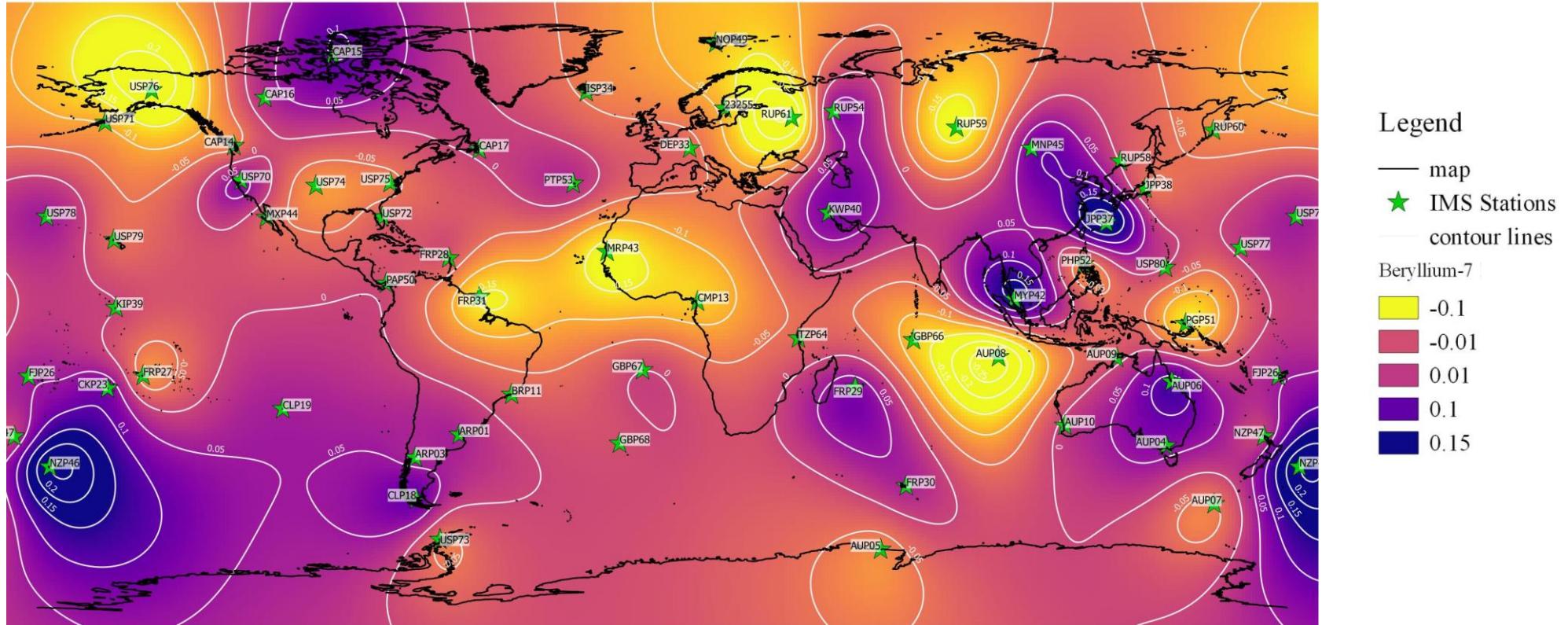
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2015

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

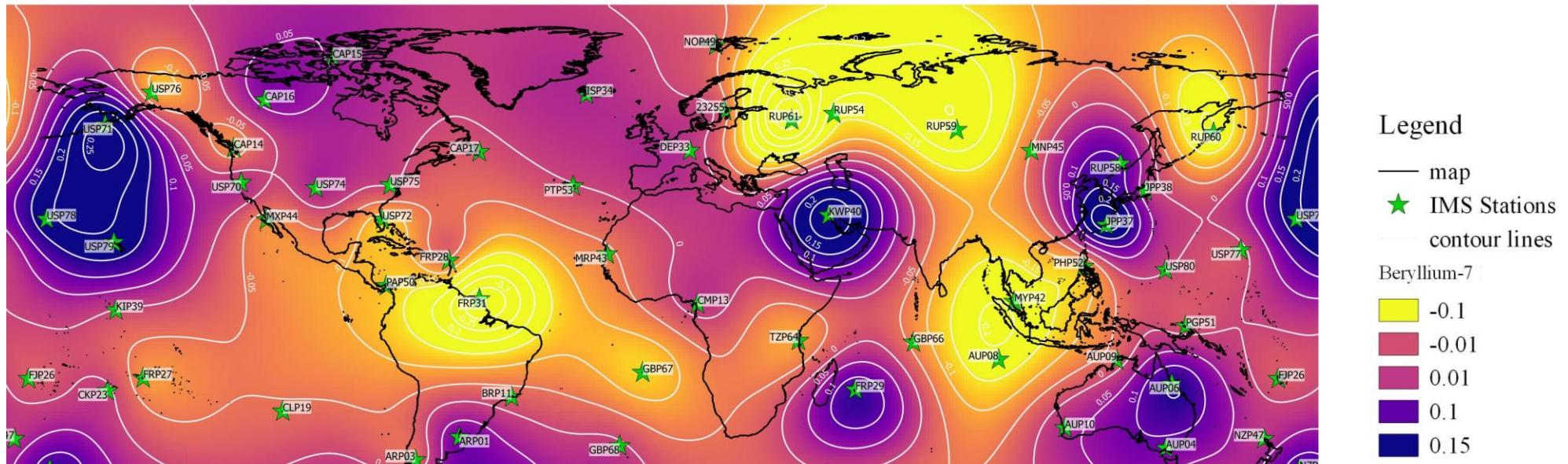
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2016

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

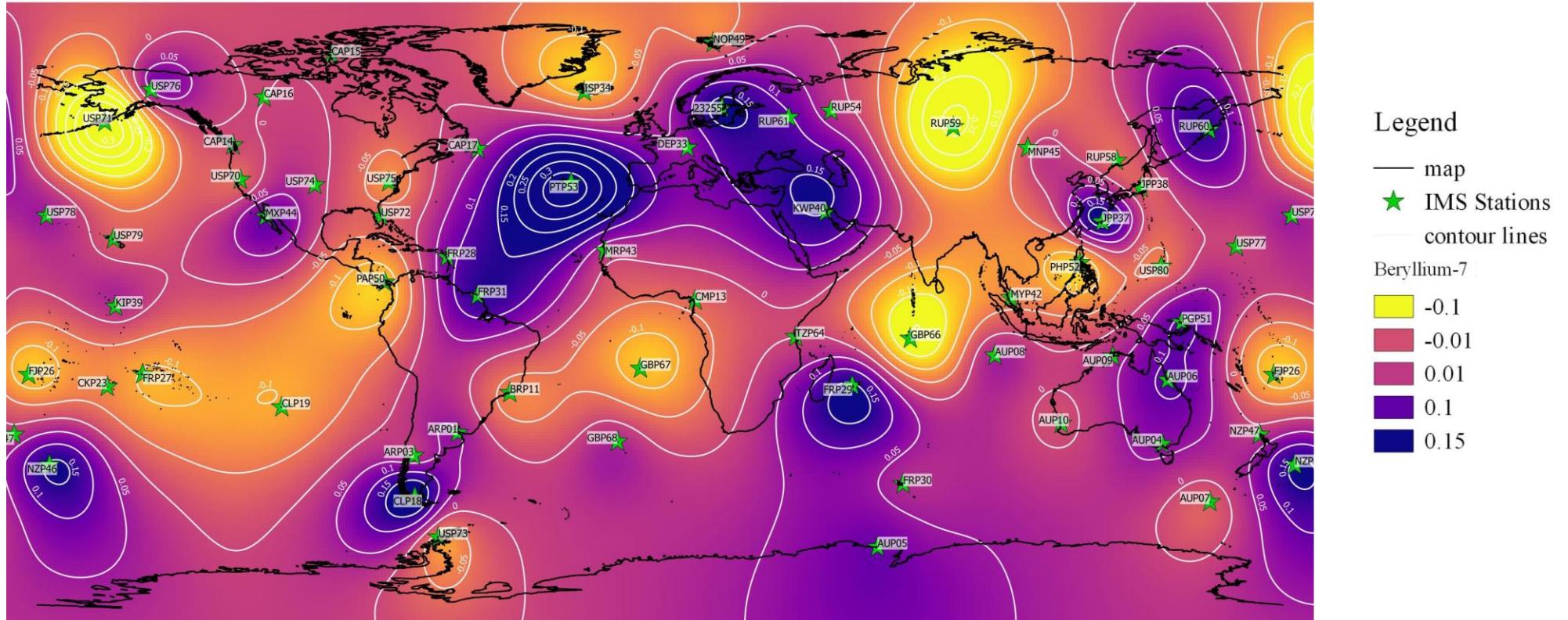
## <sup>7</sup>Be normalized trend interpolated into a global map



2017

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>.

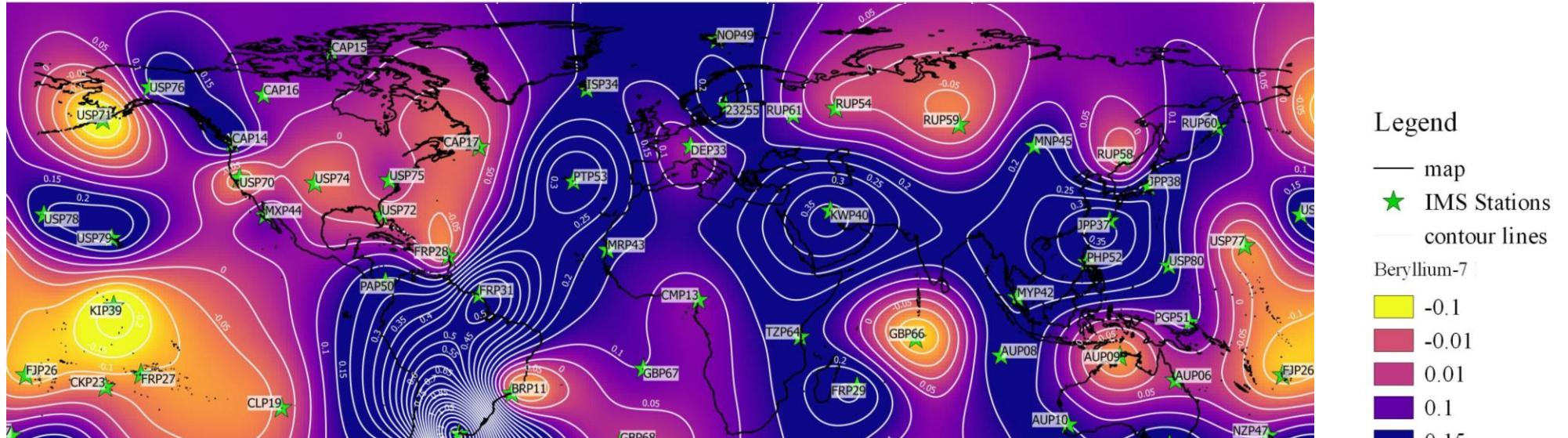
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2018

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

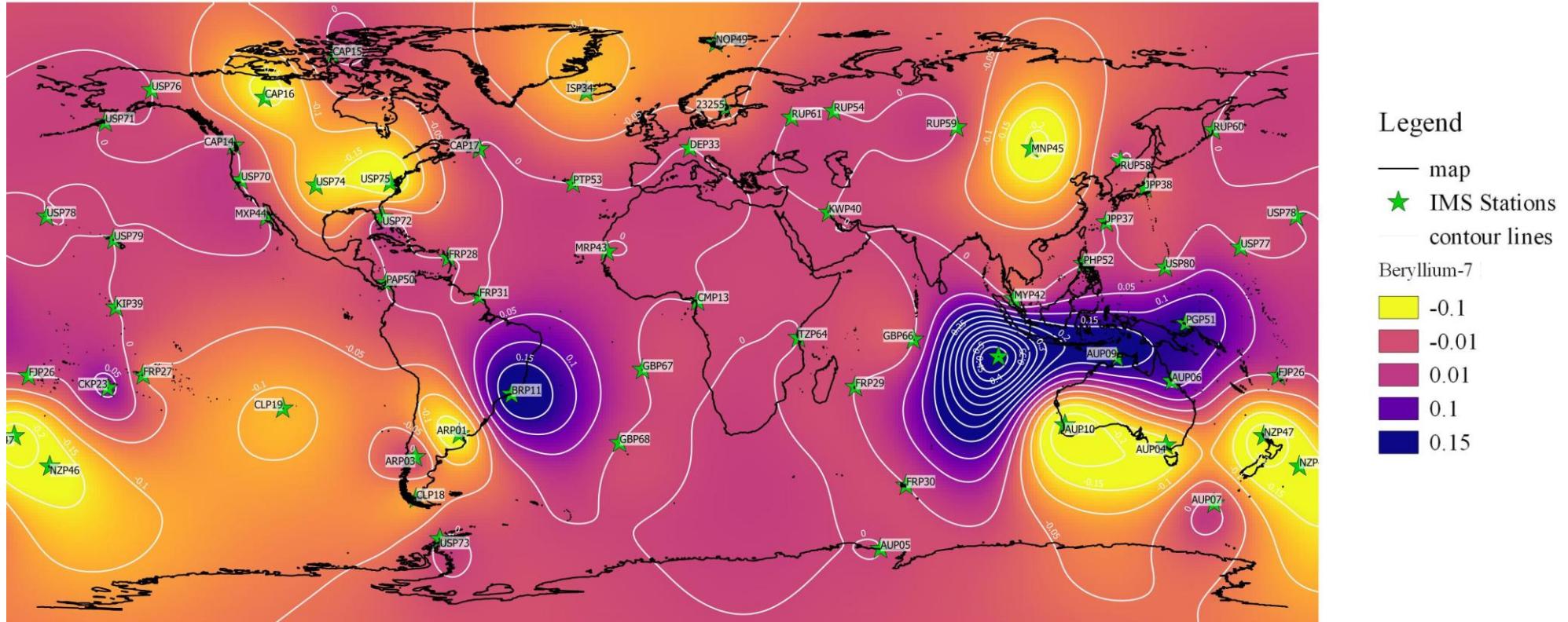
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2019

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

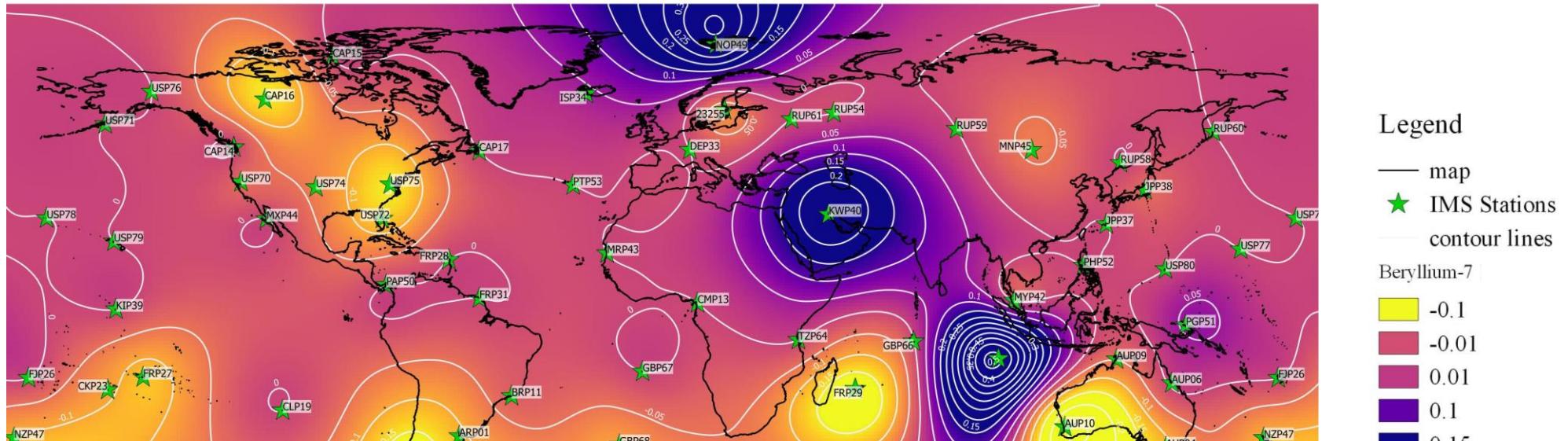
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2003

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

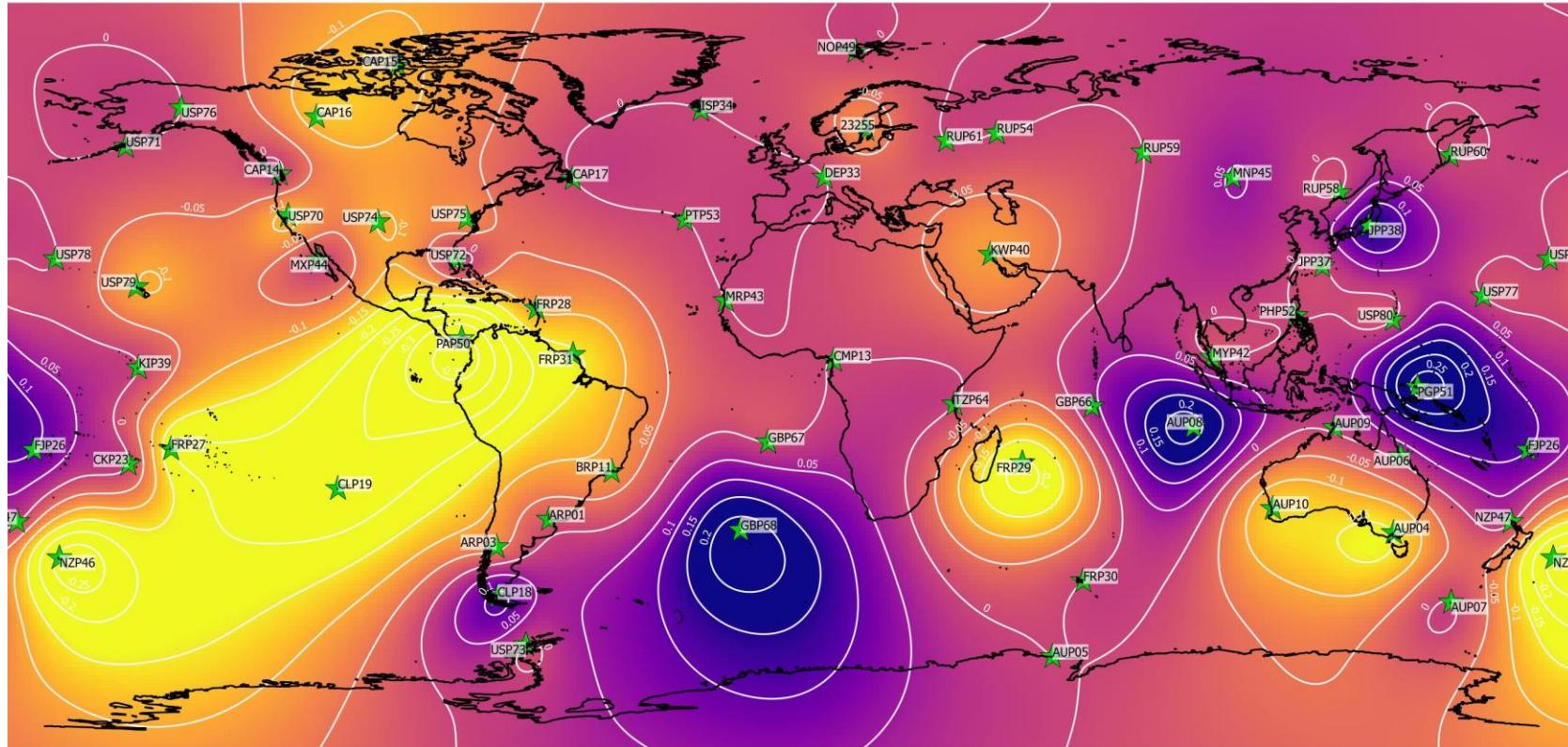
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2004

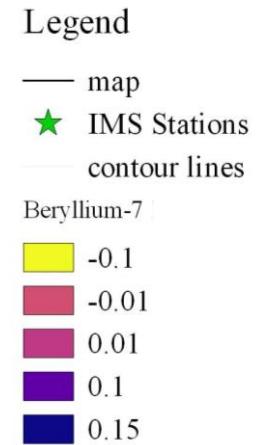
Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

## $^{7}\text{Be}$ normalized trend interpolated into a global map

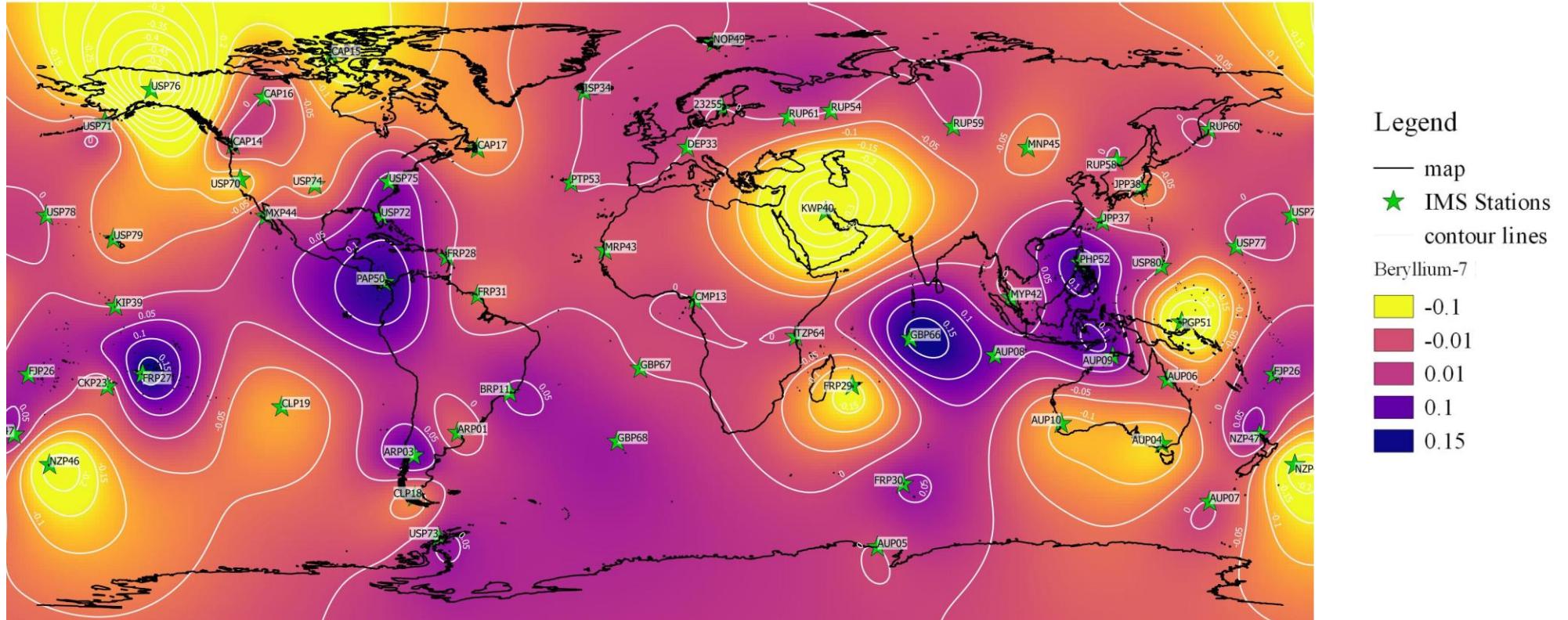


2005

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.



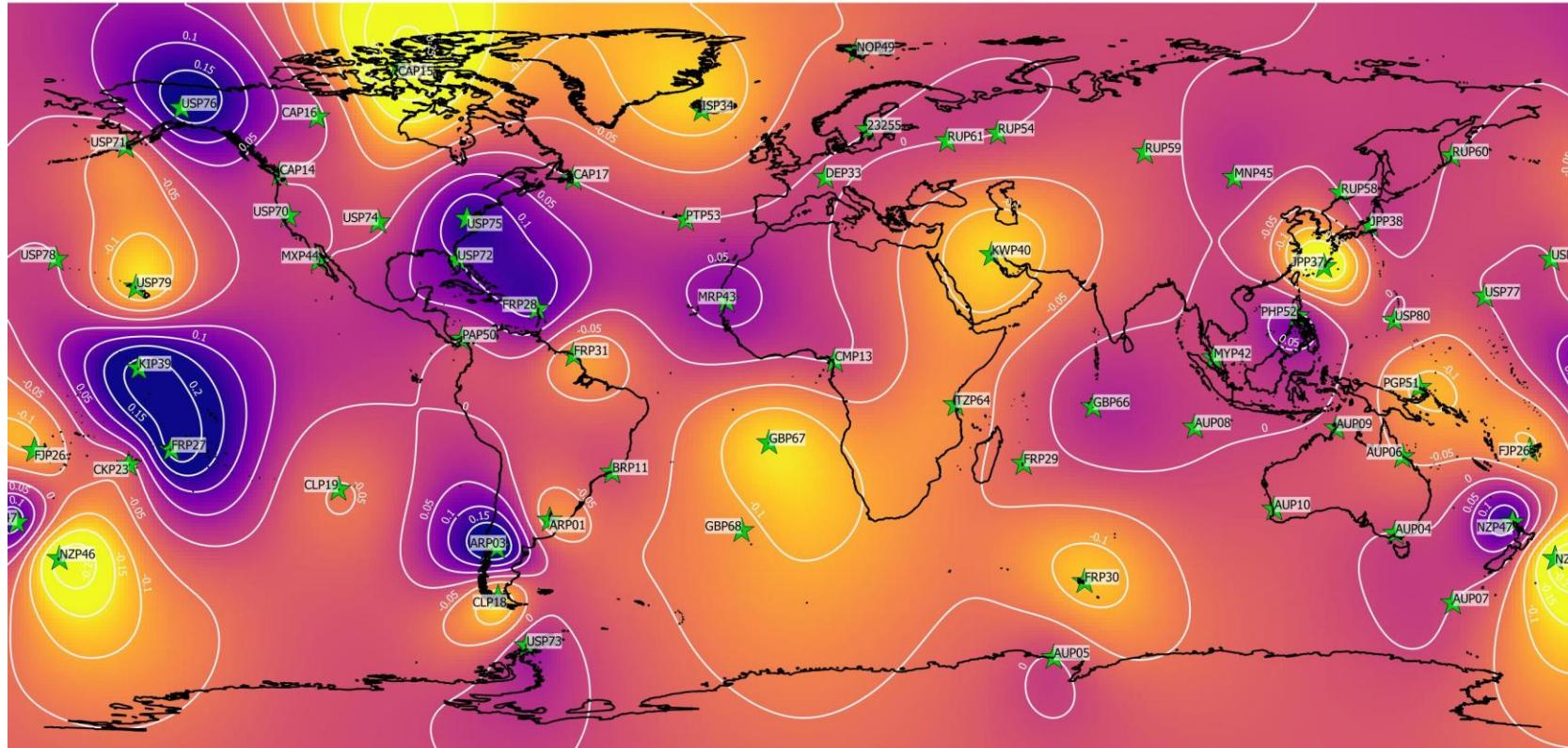
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2006

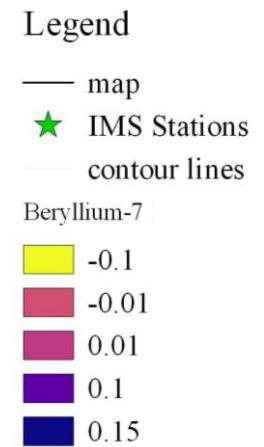
Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

## $^{7}\text{Be}$ normalized trend interpolated into a global map

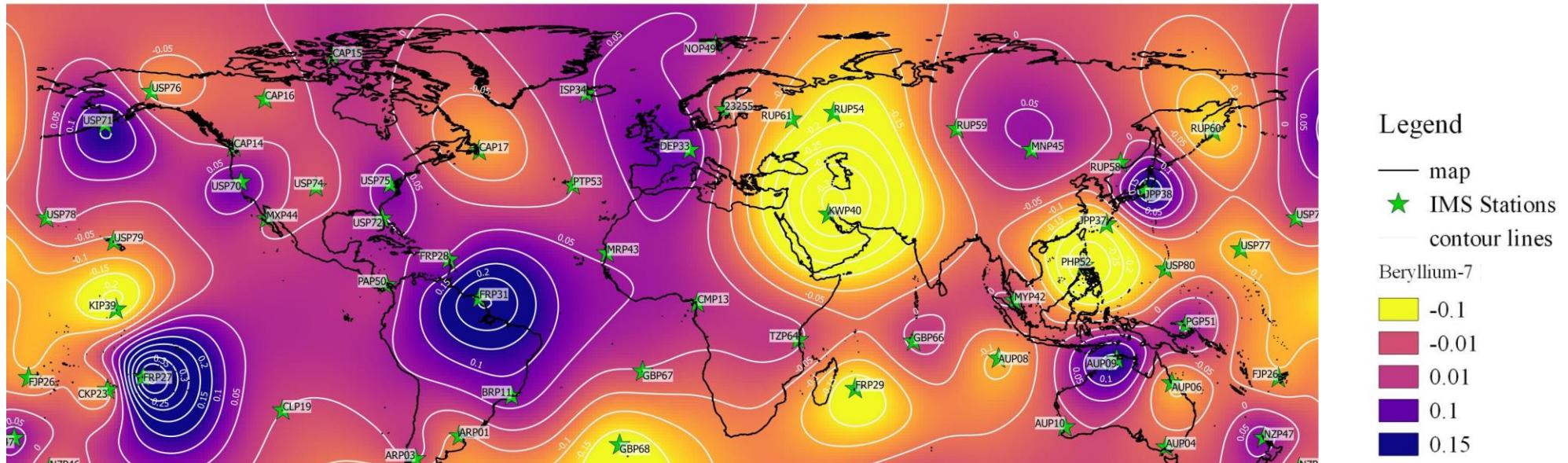


2007

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.



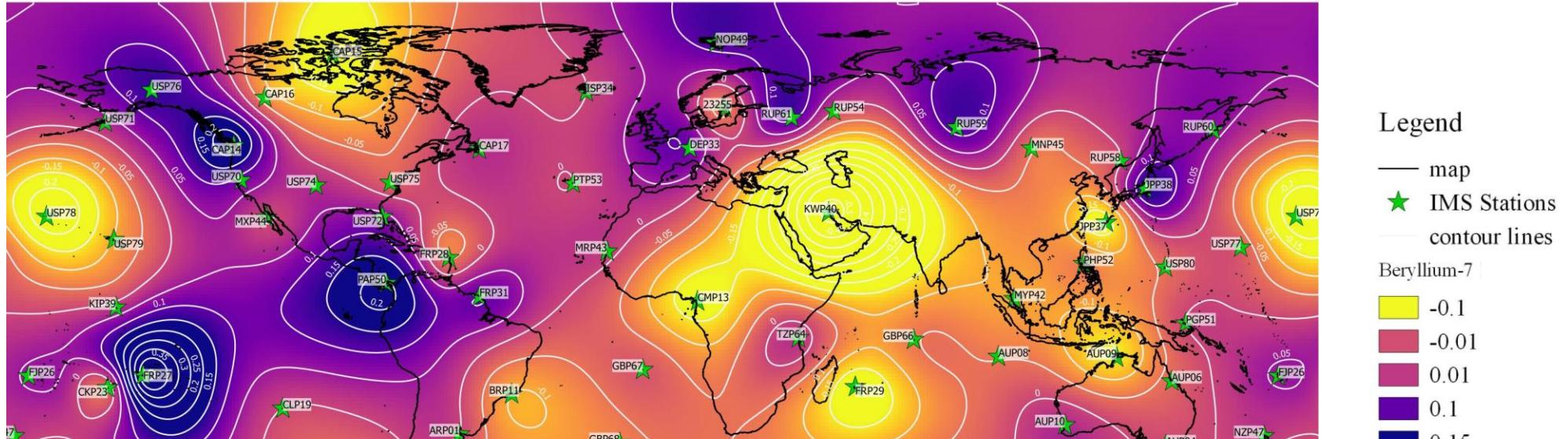
## <sup>7</sup>Be normalized trend interpolated into a global map



2008

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

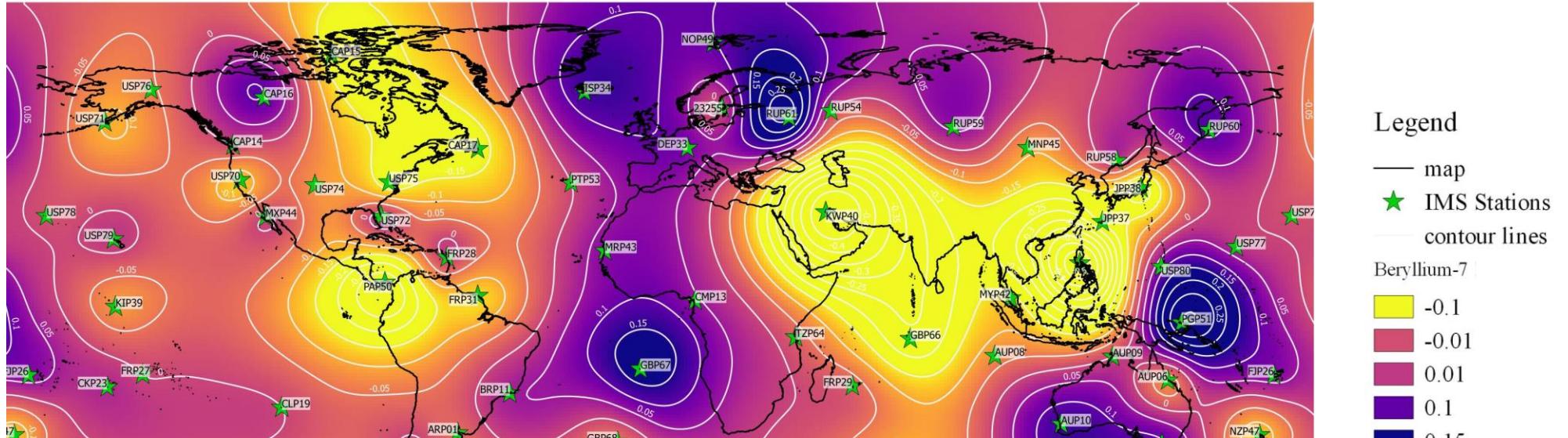
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2009

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

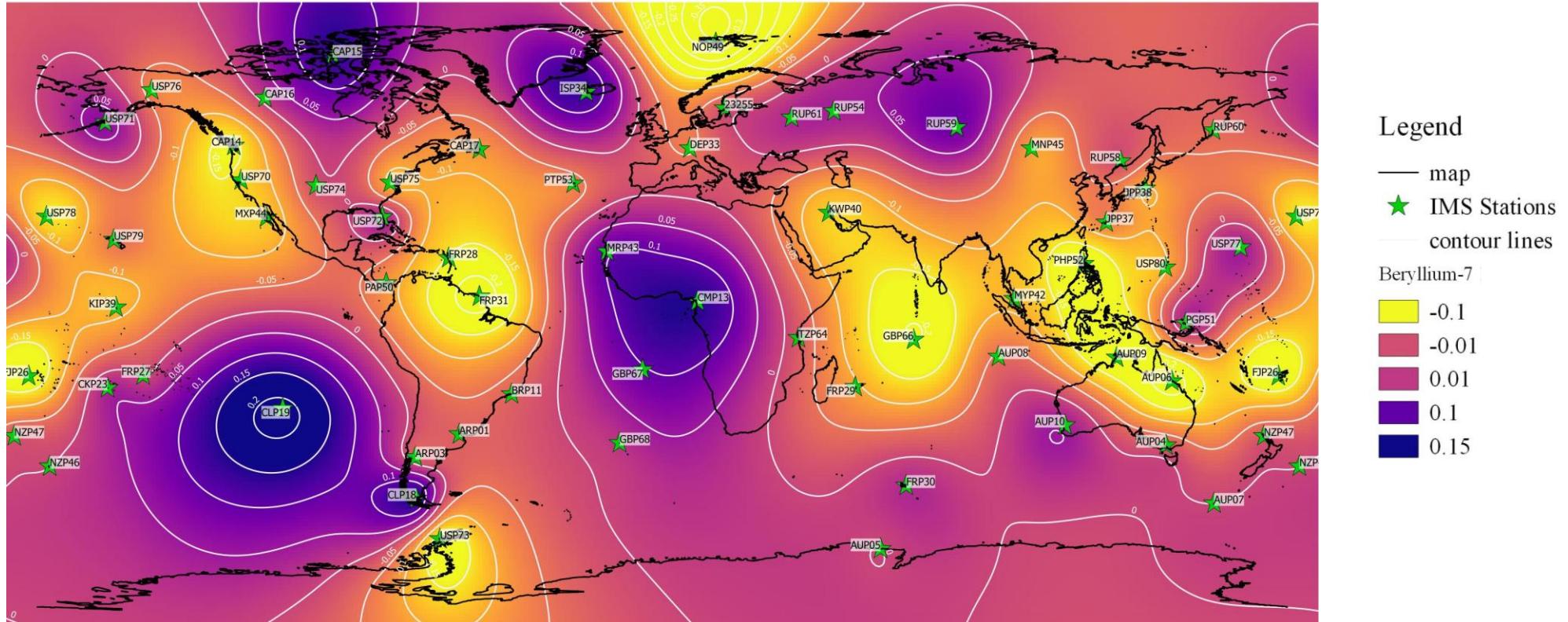
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2010

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

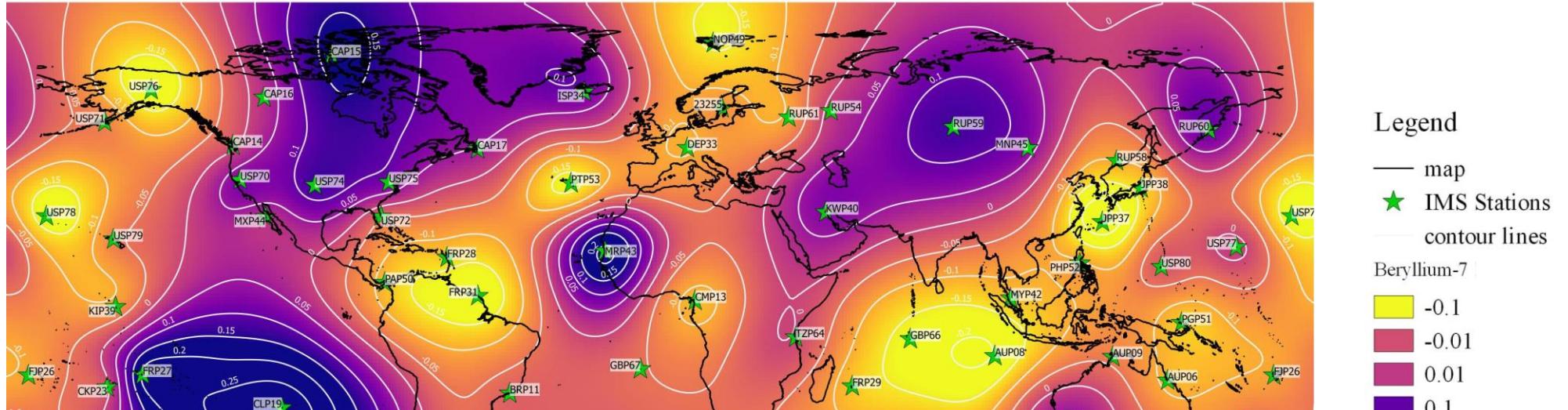
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2011

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

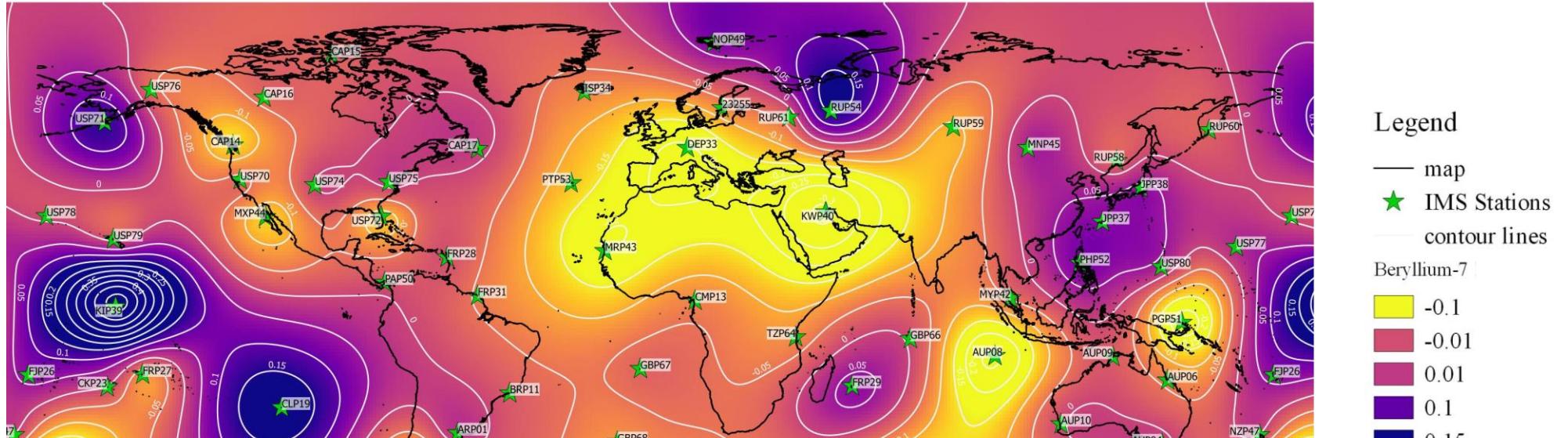
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2012

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

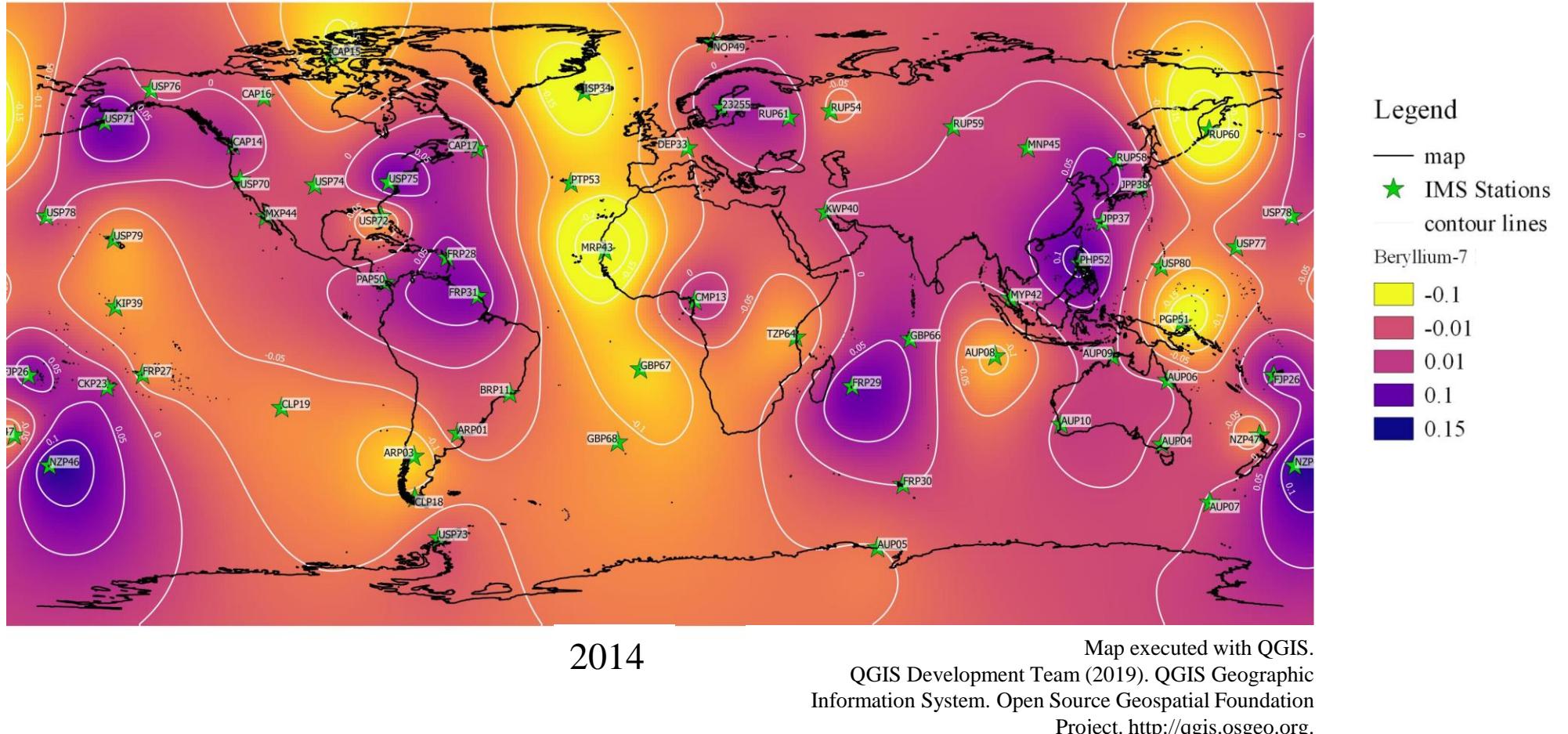
## $^{7}\text{Be}$ normalized trend interpolated into a global map



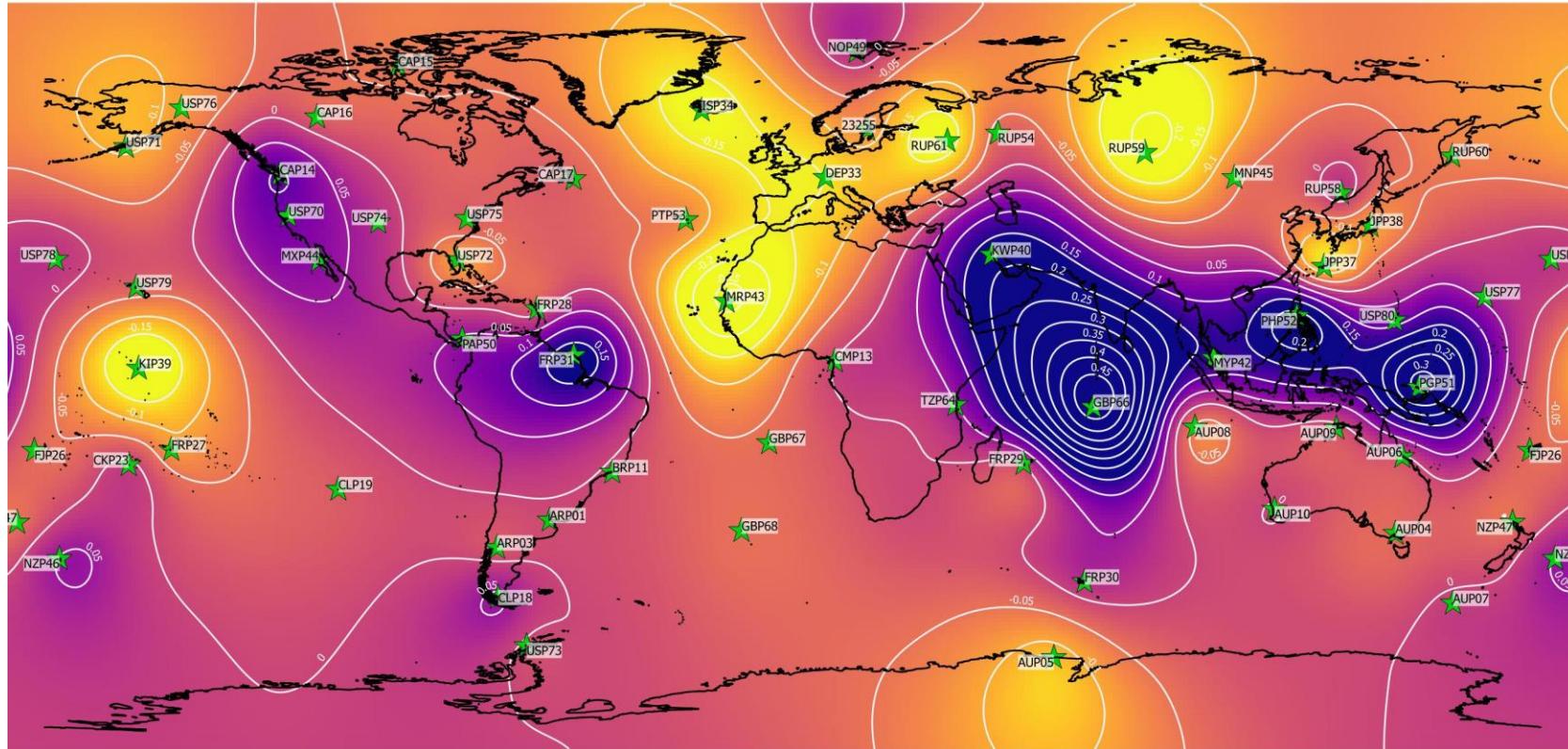
2013

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

## $^{7}\text{Be}$ normalized trend interpolated into a global map

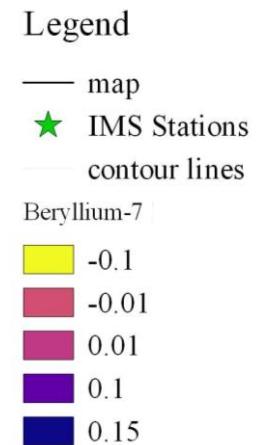


## $^{7}\text{Be}$ normalized trend interpolated into a global map

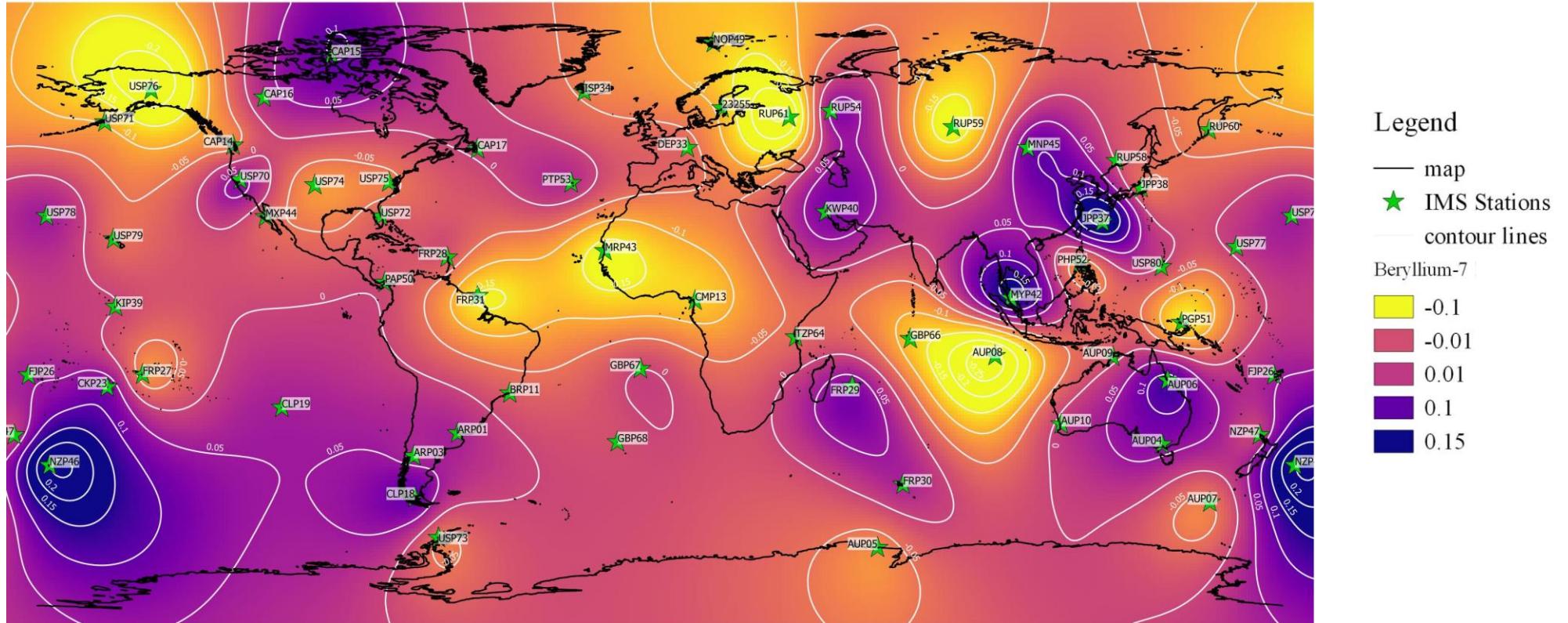


2015

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic  
Information System. Open Source Geospatial Foundation  
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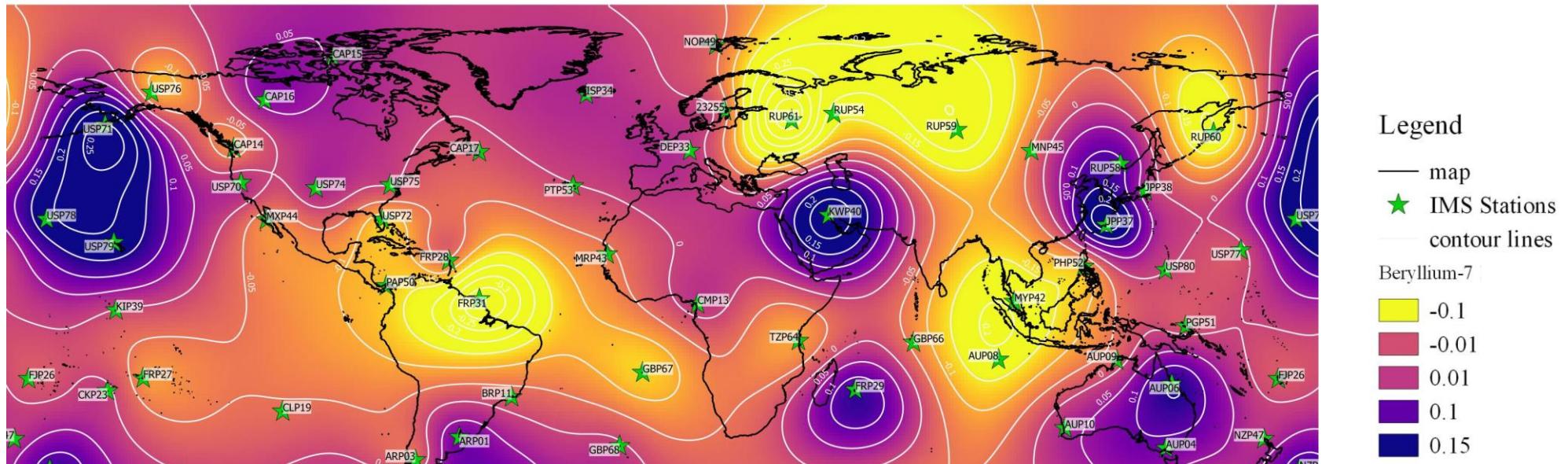
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2016

Map executed with QGIS.  
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Information System. Open Source Geospatial Foundation  
Project. <http://qgis.osgeo.org>.

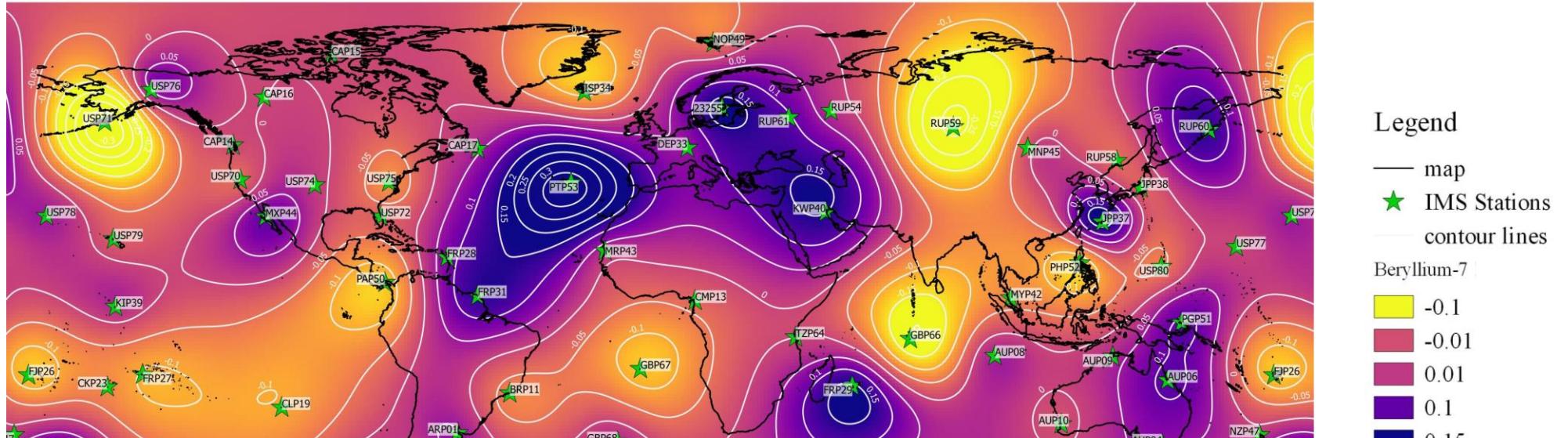
## <sup>7</sup>Be normalized trend interpolated into a global map



2017

Map executed with QGIS.  
QGIS Development Team (2019). QGIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>.

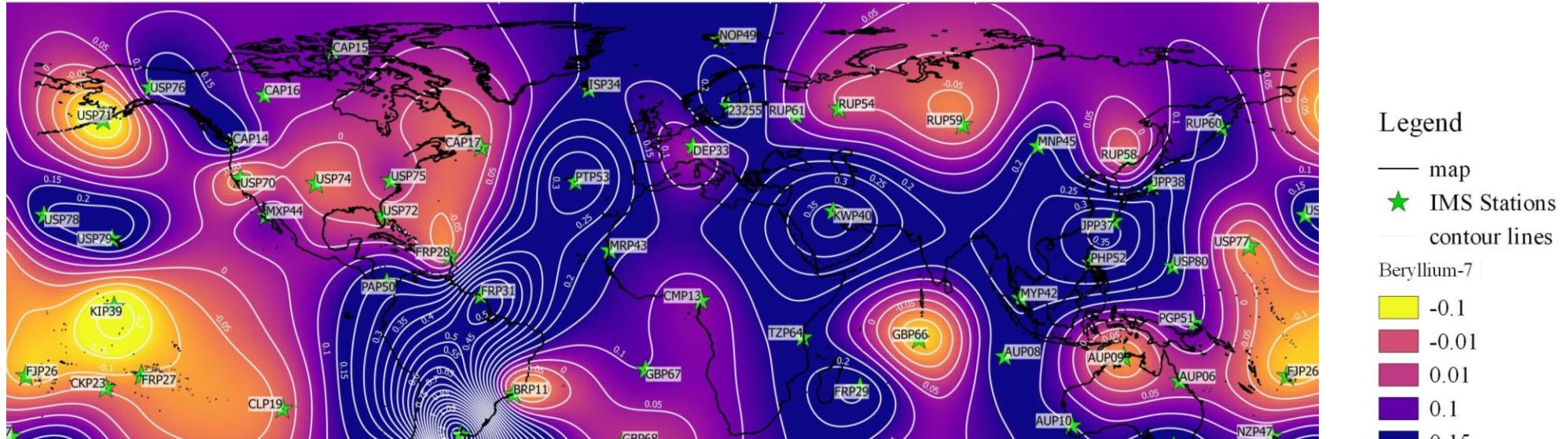
## $^{7}\text{Be}$ normalized trend interpolated into a global map



2018

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2019

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