



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)
/ Publications of IISER Mohali (/jspui/handle/123456789/4)
/ Research Articles (/jspui/handle/123456789/9)

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/3475>


Title:	Galaxy And Mass Assembly (GAMA): properties and evolution of red spiral galaxies
Authors:	Mahajan, Smriti (/jspui/browse?type=author&value=Mahajan%2C+Smriti) Gupta, Kriti Kamal (/jspui/browse?type=author&value=Gupta%2C+Kriti+Kamal) Rana, Rahul (/jspui/browse?type=author&value=Rana%2C+Rahul)
Keywords:	Galaxies: evolution Galaxies: fundamental parameters Galaxies: star formation Galaxies: stellar content Galaxies: structure
Issue Date:	2020
Publisher:	Oxford University Press
Citation:	Monthly Notices of the Royal Astronomical Society, 491(1), pp.398-408.
Abstract:	We use multiwavelength data from the Galaxy And Mass Assembly (GAMA) survey to explore the cause of red optical colours in nearby ($0.002 < z < 0.06$) spiral galaxies. We show that the colours of red spiral galaxies are a direct consequence of some environment-related mechanism(s) that has removed dust and gas, leading to a lower star formation rate. We conclude that this process acts on long time-scales (several Gyr) due to a lack of morphological transformation associated with the transition in optical colour. The specific star formation rate (sSFR) and dust-to-stellar mass ratio of red spiral galaxies is found to be statistically lower than blue spiral galaxies. On the other hand, red spirals are on average 0.9 dex more massive, and reside in environments 2.6 times denser than their blue counterparts. We find no evidence of excessive nuclear activity, or higher inclination angles to support these as the major causes for the red optical colours seen in ≥ 47 per cent of all spirals in our sample. Furthermore, for a small subsample of our spiral galaxies that are detected in H I, we find that the SFR of gas-rich red spiral galaxies is lower by ~ 1 dex than their blue counterparts.
Description:	Only IISERM authors are available in the record.
URI:	https://academic.oup.com/mnras/article/491/1/398/5607797 (https://academic.oup.com/mnras/article/491/1/398/5607797) http://hdl.handle.net/123456789/3475 (http://hdl.handle.net/123456789/3475)
Appears in	Research Articles (/jspui/handle/123456789/9)
Collections:	

Files in This Item:

File	Description	Size	Format
Need to add pdf.odt (/jspui/bitstream/123456789/3475/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text

[View/Open \(/jspui/bitstream/123456789/3475/1/Need%20to%20add%20pdf.odt\)](#)

Show full item record (</jspui/handle/123456789/3475?mode=full>)

 (</jspui/handle/123456789/3475/statistics>)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.