which the spectra were taken, samples central regions with dimensions of 1.7 × 1.7 and 6.2 × 6.2 kpc^{-2}.

A comparison of hydrogen recombination line intensities with infrared luminosities in principle allows the determination of the masses of the stars formed in a starburst. In practice such a comparison is complicated by the fact that the field of view of the IRAS detectors is much larger (of the order of several square arcminutes, see Table 1) than the aperture used for the spectral observations. To outline the kind of analysis that one would like to carry out on the basis of the available data, I present below a preliminary discussion of one of the galaxies shown in Fig. 2.

The galaxy associated with IRAS 1027-395 is listed in the *ESO/Uppsala Survey of the ESO (B) Atlas* (Lauberts 1982) as a disturbed SB galaxy situated in a cluster. It has optical dimensions of 66″ × 48″ corresponding to major and minor axes of 29 and 21 kpc at the adopted distance of 89 Mpc. The integrated blue magnitude and the optical colour in a 62 arcsecond aperture are given as B = 13.69 and B-V = 0.56. If we make standard assumptions to correct for reddening on the basis of the observed $H\alpha/H\beta$ line ratio and if we assume that the hydrogen line to continuum ratio is the same everywhere in the galaxy (a somewhat questionable assumption) we derive an integrated $H\alpha$ luminosity of 1.1×10^{-15} W m^{-2} for IRAS 1027-395.

Based on the observed IRAS fluxes at 60 and 100 μm we obtain an integrated infrared flux of 2.2×10^{-13} W m^{-2} yielding a total galactic luminosity of 5.4×10^{10} $L_{\odot}$. Using data tabulated by Panagia (1973) we then find that the derived $H\alpha$ and total luminosities could be emitted by 2×10^6 B0V stars. Those stars have masses of about 15 $M_{\odot}$ and main-sequence lifetimes of about 10^7 years so that we finally derive a rate of formation of massive stars of ~3 $M_{\odot}$ yr^{-1}. Although this result has been derived by assuming that all stars have the same mass it does not drastically change if we take into account that stars probably form with a mass spectrum that falls off steeply towards higher masses.

The derived star formation rate of massive stars may be a severe lower limit to the total rate of star formation. If the mass spectrum of stars born in a starburst has the same slope as observed for stars born in our own galaxy and if it extends down to about 0.1 solar mass the total starformation rate increases to about 30 $M_{\odot}$ yr^{-1}. In that case a galaxy would use up most of its available interstellar gas during a starburst in a few hundred million years.

We hope that our study of an infrared complete sample of starburst galaxies at ESO will ultimately provide answers to such fundamental questions as:

- What triggers starbursts?
- How much mass is converted into stars during a starburst?
- How long does the starburst phase last?
- Do all galaxies at one time or another experience starbursts?
- Is there any connection between starburst and Seyfert galaxies (fuelling of central engines)?

Distribution and Access of IRAS Data in Europe

The remarks above may have sufficiently illustrated the need and the potential rewards of ground-based observational programmes to follow-up IRAS discoveries. In view of the huge size of the IRAS database and of the diversity of astronomical information that it contains this is a task that has to be taken up by the astronomical community at large. In order to get prepared for this in Europe we will briefly discuss a few relevant aspects of the future distribution and access of IRAS data in Europe.

TABLE 1. PROPERTIES OF IRAS SURVEY ARRAY DETECTORS

Central wavelength (μm)	Wavelength range (μm)	Detector field of view (arcminute²)	Detector dwell time (s)	Sensitivity at SNR = 10 (Jy)
12	8.5 – 15	0.75 × 4.5	0.19	0.7
25	19 – 30	0.75 × 4.6	0.19	0.65
60	48 – 80	1.5 × 4.7	0.39	0.85
100	83 – 120	3.0 × 5.0	0.78	3.0

As presently foreseen the IRAS catalogues will be published in late November 1984. There will be two main catalogues and several so-called specialty catalogues. The main catalogues are:

1. The point source catalogue (~300,000 sources)
2. The catalogue of small extended sources (present estimate: ~50,000 sources with sizes less than 8 arcminutes)

These will be available on tape and can be obtained in the US from the National Space Science Data Center and in Europe probably through the Centre de Données Stellaires in Strasbourg.

The paper editions of both catalogues consisting of about 5 volumes (about 3,000 pages) will come out some time in the spring of 1985.

To be able to access, display and analyse the IRAS catalogues we are presently setting up an IRAS data centre in Holland at the Astronomical Institute of the University of Amsterdam. A similar centre will be established at the Rutherford and Appleton Laboratories in Chilton, England.

At the IRAS centre in Amsterdam it will be possible to access the catalogues and to extract sources according to a variety of criteria. We have also acquired tape copies of most major astronomical catalogues for comparison with and further analysis of the IRAS data. We hope to have all software ready by November to be able to get going as soon as the IRAS catalogues become available.

Although set up initially for use by the Dutch astronomical community, European astronomers who would like to analyse IRAS data relevant for their own research programmes are invited to get in touch with the IRAS centre if they would like to make use of the facilities in Amsterdam. We will probably be able to accommodate a maximum of two visitors at any time. Interested colleagues should contact Dr. T. de Jong, Astronomical Institute Anton Pannekoek, University of Amsterdam, Roetersstraat 15, 1018 WB Amsterdam, The Netherlands.

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