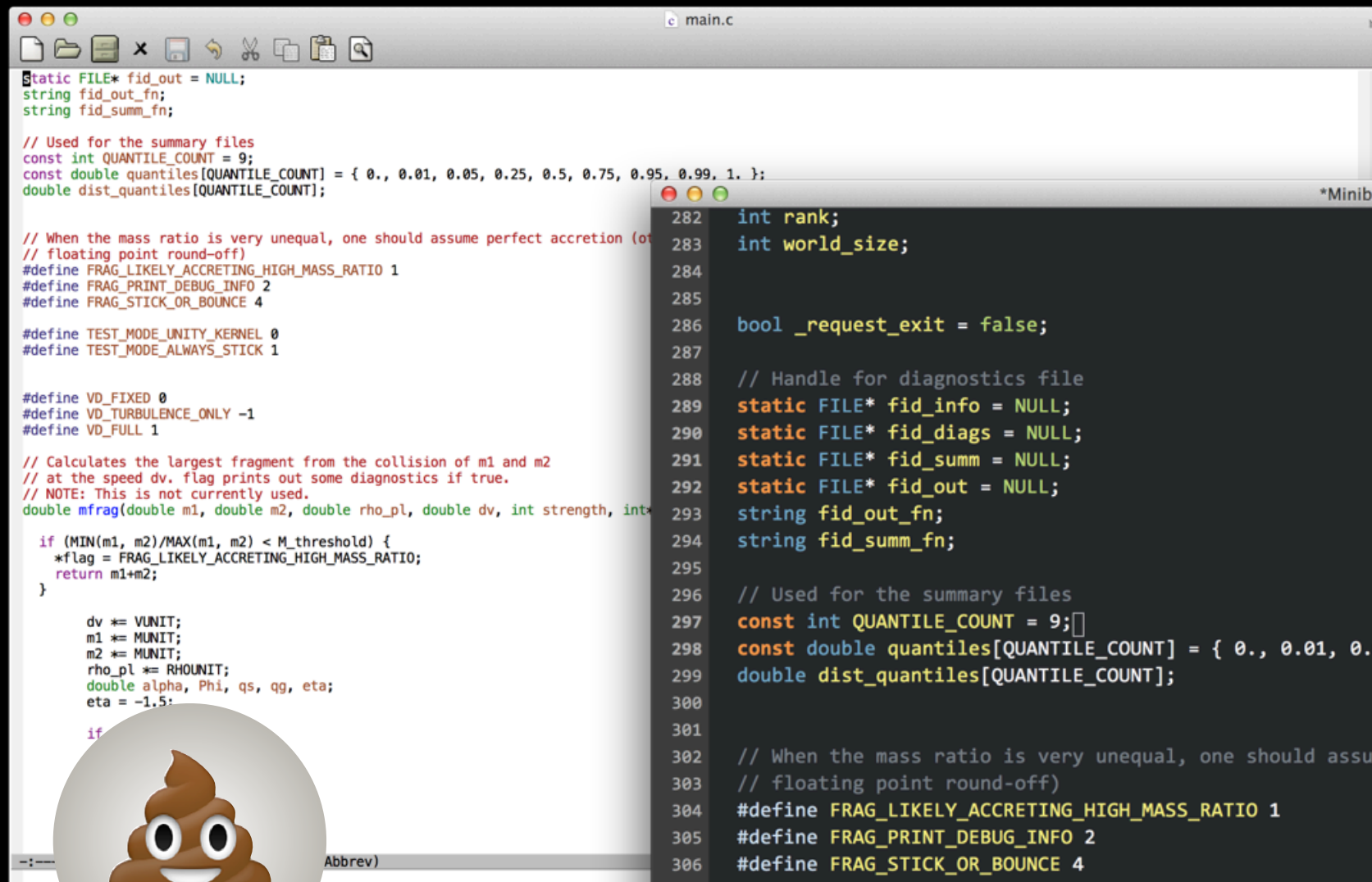


MAKE YOUR EMACS SPARKLE!

STEFANO MESCHIARI, GSPS, 11/07



```
static FILE* fid_out = NULL;
string fid_out_fn;
string fid_summ_fn;

// Used for the summary files
const int QUANTILE_COUNT = 9;
const double quantiles[QUANTILE_COUNT] = { 0., 0.01, 0.05, 0.25, 0.5, 0.75, 0.95, 0.99, 1. };
double dist_quantiles[QUANTILE_COUNT];

// When the mass ratio is very unequal, one should assume perfect accretion (otherwise mass accretion is lost in
// floating point round-off)
#define FRAG_LIKELY_ACCRETING_HIGH_MASS_RATIO 1
#define FRAG_PRINT_DEBUG_INFO 2
#define FRAG_STICK_OR_BOUNCE 4

#define TEST_MODE_UNITY_KERNEL 0
#define TEST_MODE_ALWAYS_STICK 1

#define VD_FIXED 0
#define VD_TURBULENCE_ONLY -1
#define VD_FULL 1

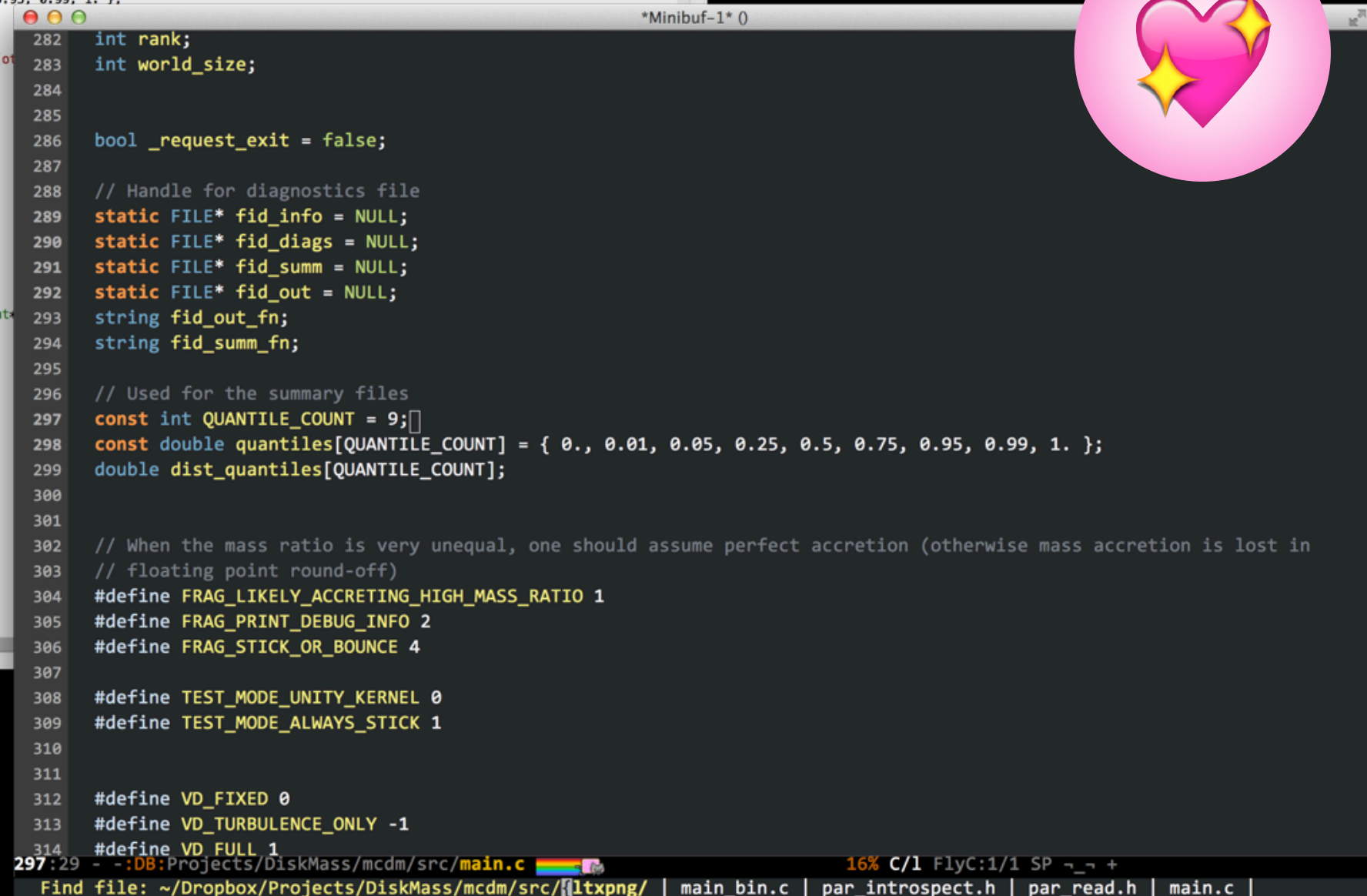
// Calculates the largest fragment from the collision of m1 and m2
// at the speed dv. flag prints out some diagnostics if true.
// NOTE: This is not currently used.
double mfrag(double m1, double m2, double rho_pl, double dv, int strength, int
if (MIN(m1, m2)/MAX(m1, m2) < M_threshold) {
    *flag = FRAG_LIKELY_ACCRETING_HIGH_MASS_RATIO;
    return m1+m2;
}

dv *= VUNIT;
m1 *= MUNIT;
m2 *= MUNIT;
rho_pl *= RHOUNIT;
double alpha, Phi, qs, qg, eta;
eta = -1.5;

if
```

BEFORE

AFTER



```
282 int rank;
283 int world_size;
284
285
286 bool _request_exit = false;
287
288 // Handle for diagnostics file
289 static FILE* fid_info = NULL;
290 static FILE* fid_diags = NULL;
291 static FILE* fid_summ = NULL;
292 static FILE* fid_out = NULL;
293 string fid_out_fn;
294 string fid_summ_fn;
295
296 // Used for the summary files
297 const int QUANTILE_COUNT = 9;
298 const double quantiles[QUANTILE_COUNT] = { 0., 0.01, 0.05, 0.25, 0.5, 0.75, 0.95, 0.99, 1. };
299 double dist_quantiles[QUANTILE_COUNT];
300
301
302 // When the mass ratio is very unequal, one should assume perfect accretion (otherwise mass accretion is lost in
303 // floating point round-off)
304 #define FRAG_LIKELY_ACCRETING_HIGH_MASS_RATIO 1
305 #define FRAG_PRINT_DEBUG_INFO 2
306 #define FRAG_STICK_OR_BOUNCE 4
307
308 #define TEST_MODE_UNITY_KERNEL 0
309 #define TEST_MODE_ALWAYS_STICK 1
310
311
312 #define VD_FIXED 0
313 #define VD_TURBULENCE_ONLY -1
314 #define VD_FULL 1
315
297:29 - - :DB:Projects/DiskMass/mcdm/src/main.c 16% C/1 FlyC:1/1 SP _ _ +
Find file: ~/Dropbox/Projects/DiskMass/mcdm/src/ltxpng/ | main_bin.c | par_introspect.h | par_read.h | main.c |
```

WHY EMACS?



TextWrangler



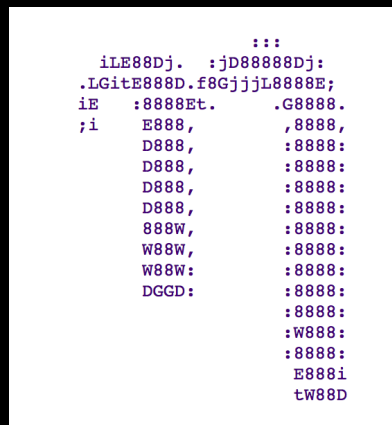
Xcode



Aquamacs



TeXShop



nano



Vim (yuck!)



Emacs



TextEdit



Your Web browser

A TALE OF EDITORS

An ancient Astronomy faculty hears cries of torment from her postdoc's office, and goes to investigate.

She finds the postdoc crying on the floor. "What's the problem?" she asks. "Why did you cry out?"

"My life is terrible. I must use three editors and the IDL Desktop each day to get my work done, because not one of them does everything."

The faculty nods gravely, and asks, "And what do you propose that will solve this?"

A TALE OF EDITORS

Suddenly excited, he says, "Well, it's obvious. I will write the best editor ever. It will do everything that the existing four editors do, but better, and the world will be a better place."

The astronomer quickly raises her frail hand and smacks the postdoc on the side of his head.

The postdoc is unhurt, but shocked. "What have I done wrong?" he asks.

"Fool!" says the faculty. "Do
you think I want to learn yet
another editor?"

Immediately, the postdoc is
enlightened.



WHY EMACS?

Emacs is a mediocre editor that happens to be near-infinitely extensible and customizable.

Emacs has been around for decades, is free and open-source, and is available for virtually all platforms that have been and ever will be. **Your time investment's not going away.**

Department computers come preinstalled with two versions of Emacs: an ancient version shipped with Mac OS X (in `/usr/bin/emacs`) and one called "Aquamacs". Both are pretty awful.

**That's Aquamacs. For the love of God
do not stare into his evil eyes.**



NO MATTER WHICH VERSION...

Emacs out of the box is not very good or ergonomic. However, in contrast to most other editors, you can configure it to fit your needs and mold it into a powerful companion.

A few of the things I will talk about:

- Why Emacs?

- Emacs tricks & shortcuts everyone should know

- How to program and customize Emacs

- Emacs Packages and color themes

- Org-mode

A BRIEF HISTORY OF EMACS

Emacs stands for “Editing **MACroS**”, started in the 1970s.

For the time, it was a revolutionary project: editors used to have different “modes” for adding text, editing text, and displaying your file! Emacs was **WYSWYG** and completely programmable (Macros).

Lots of different versions: the canonical one, GNU Emacs, was started in the mid-80s by Richard Stallman (one of the leaders of the free software movement).

Emacs macros are written in a language called Emacs LISP (Elisp).

SUPER PUNNY '80s EDITOR JOKES

Eight Megabytes And Constantly Swapping

Emacs Means A Crappy Screen

Even My Aunt Crashes the System

Emacs May Allow Customized Screwups

Easily Mangles, Aborts, Crashes and Stupifies

MY RIG IN 1992



```
MicroEMACS V2.1  
This is a MicroEMACS test.
```

```
-* MicroEMACS -- main -----
```

GETTING STARTED

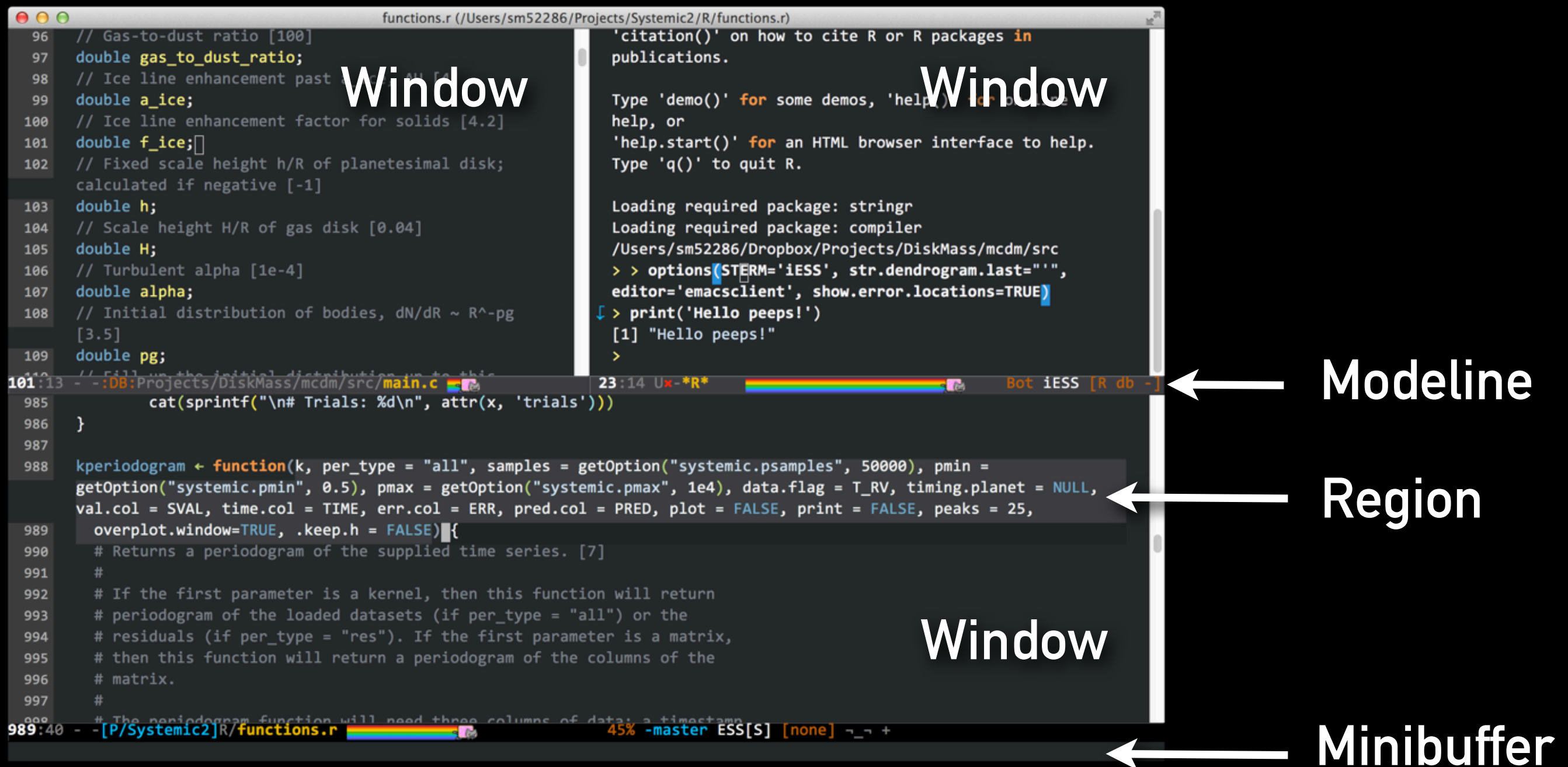
Download Emacs 24.4 from <http://www.emacsformacosx.com> or Homebrew.

Some of the stuff that I will demonstrate comes with packages and customizations I have installed.

<https://github.com/stefano-meschiari/SMESCHIA> is a collection of my customizations - download if you want to start from a pre-made collection of packages.

QUICK TERMINOLOGY

Open files (including ones not shown) are called Buffers.



Screen

QUICK TERMINOLOGY

```
96 // Gas-to-dust ratio [100]
97 double gas_to_dust_ratio;
98 // Ice line enhancement past a_ice, AU [4]
99 double a_ice;
100 // Ice line enhancement factor for solids [4.2]
101 double f_ice;
102 // Fixed scale height h/R of planetesimal disk;
    calculated if negative [-1]
103 double h;
104 // Scale height H/R of gas disk [0.04]
105 double H;
106 // Turbulent alpha [1e-4]
107 double alpha;
108 // Initial distribution of bodies, dN/dR ~ R^-pg
    [3.5]
109 double pg;
110 // Fill in the initial distribution up to this
    /src/main.c
als: %d\n", attr(x, 'trials'))

er_type = "all", samples = getOption("systemic.psamples", 50000), pmin =
.5), pmax = getOption("systemic.pmax", 1e4), data.flag = T_RV, timing.planet = NULL,
IME, err.col = ERR, pred.col = PRED, plot = FALSE, print = FALSE, peaks = 25,
p.h = FALSE {
the sum of the squares of the residuals

s a k
d dat
"res
return a periodogram of the columns of the

will need three columns of data: a timestamp
45% -master ESS[s] [none]
```



Rachael is
awesome?

KEYSTROKES

Commands are entered using keystrokes.

M is Alt/Option

C is Ctrl

Cmd is Command

M-x means “Press Alt and x at the same time”

C-x C-f means “Press Ctrl and x, release x keeping Ctrl pressed, then press f”

C-x f means “Press Ctrl and x, release both Ctrl and x, then press f”

DEMO

Demo is available here:

<http://goo.gl/KLFBdm>

OTHER COOL TIDBITS

- The **EIN** package supports Python notebooks within Emacs.
- The **Magit** package is a great interface to Git.
- **Projectile** lets you quickly navigate and search all files associated with a Git repository.
- **ESS** (Emacs Speaks Statistics) is a powerful package for editing R and Julia.
- ~2,400 packages, ~200 color themes!

THANK YOU!